15c

OIL WEEKLY

FOR OIL AND GAS PRODUCERS AND PIPE LINE MEN

THE WEEK'S NEWS INTERPRETED

ANOTHER RECORD FOR

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ED ON LONGEST STRING
F 1½" DRILL PIPE IN
the World!

9543 FEET

The Tool Joint picture is that of Hughes 1½" A.P.I. ready for a 10,000 ft. string of drill pipe.

The deeper you go—the tougher it gets—and you can best depend on Hughes Tools.

The drilling scene shown above is that of the Pure Oil Company's Alliance No. 6, Guedan, La.

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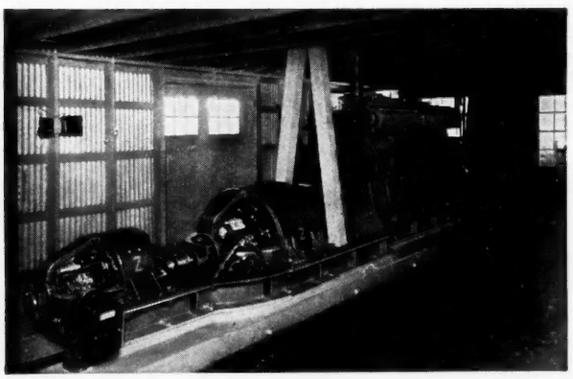

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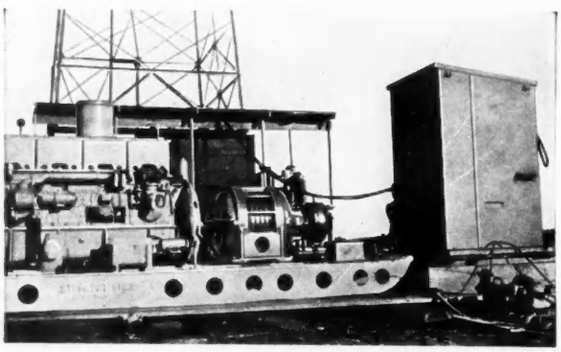

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GENERAL ELECTRIC

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WHEN YOU SHARPEN YOUR PENCIL

and get down to facts

THERE are three points to be sure about when you select equipment for guiding, floating and cementing strings of casing.

But you should be very sure that these features are present—in proper balance and always in combination, to insure 3-point landings—Happy Landings—of *your* casing.

1 - STRENGTH

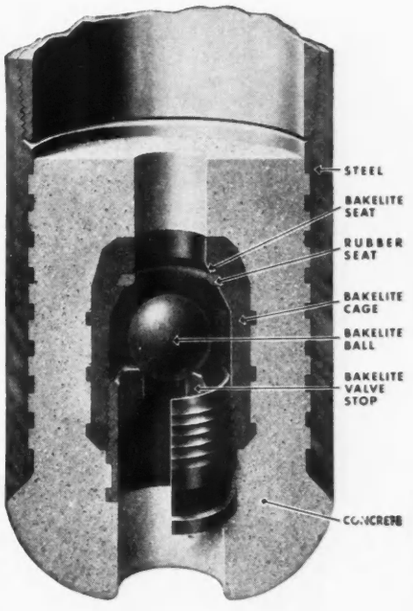
beyond the collapsing strength of your casing—always present in Baker Cement Equipment.

2 - VALVE EFFICIENCY

as provided by the streamlined passages for cement through the bakelite valve cage, and the unequalled efficiency of the floating bakelite ball which forms a leak-proof double-seal against rubber backed by bakelite the instant any back pressure develops.

3 - DRILLABILITY

which only Baker provides with an internal plug and valve made of special formula concrete, and bakelite set vertically to present a small cross-section to the drilling bit. Both bakelite and concrete are drilled up easily and rapidly into small fragments which circulate out of the well, leaving the hole free from metal or other objectionable material and ready for immediate coring or safe, straight-hole drilling.



This cutaway of a Baker Cement Float Shoe illustrates the three-point internal construction, but we refer you to pages 138 to 146 of the 1935 Composite Catalog for complete details and specifications.

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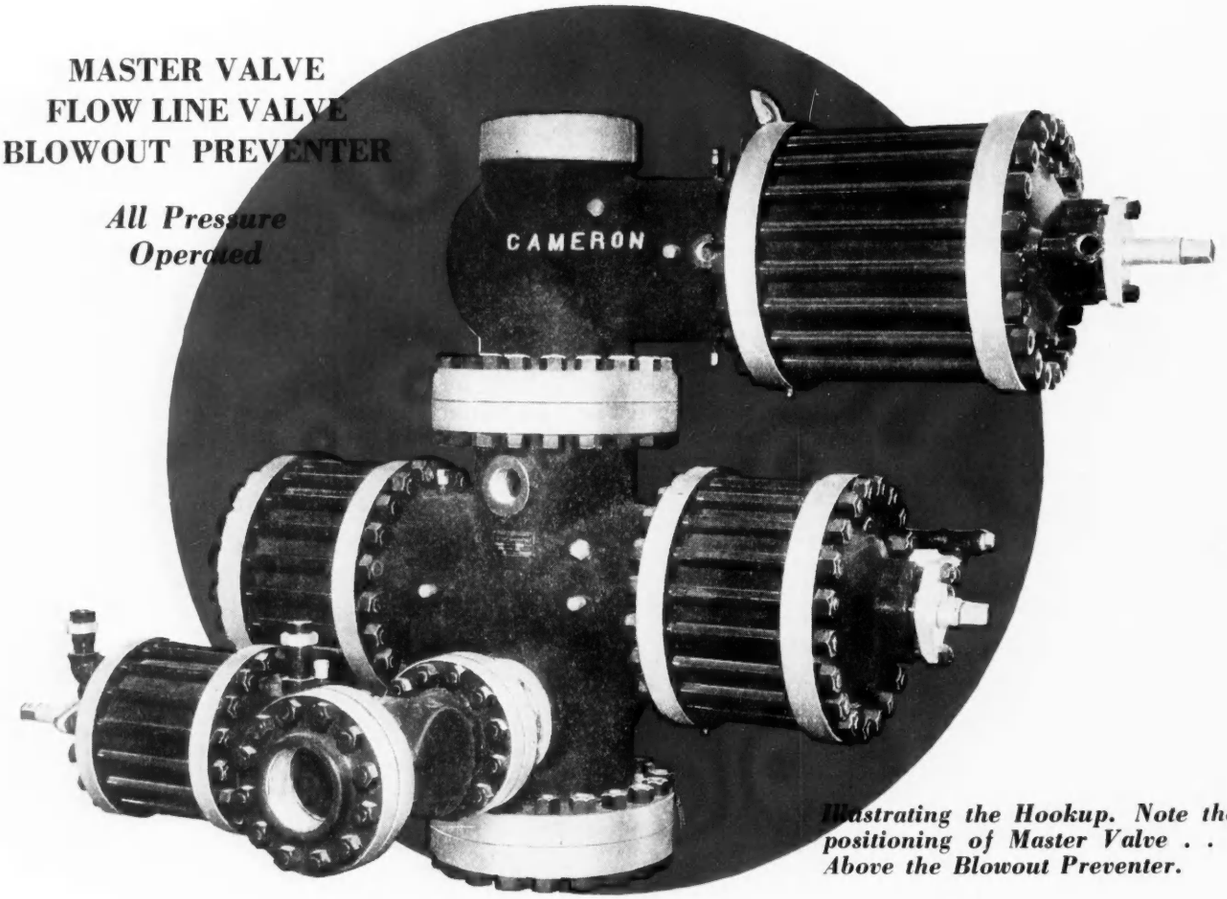

Illustrating the Hookup. Note the positioning of Master Valve . . . Above the Blowout Preventer.

This hookup permits the operator, in event of threatened blowout, to instantly close preventer rams and flow line valve. To prevent sticking drill stem while killing the well it may be rotated through the closed rams and a dependable leak-proof seal maintained during this operation. Note position of Master Valve *above* the preventer. In this position, drill pipe may be suspended on the closed rams and master valve closed, if necessary. The well may then be killed by either pumping through the drill stem, through the 3″ openings above the rams, or through the annular space between casing and drill pipe by pumping through the large fill-up opening provided below the rams.

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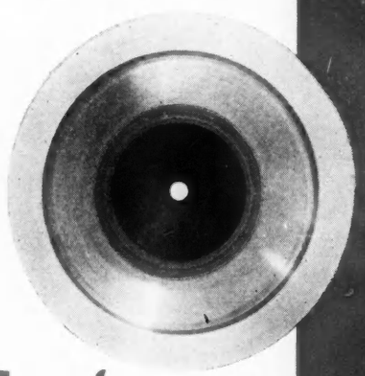

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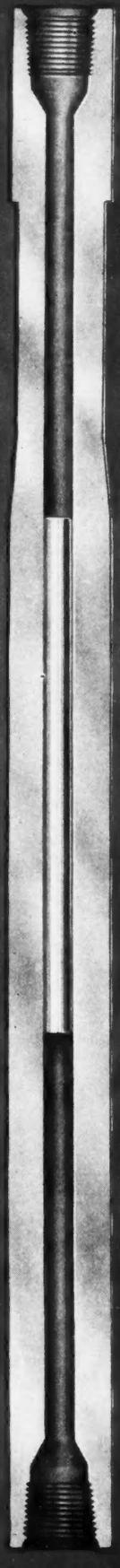
Dead-on photograph of Baash-Ross "Trubore" Drill Collar shows how straight the circulation hole is, how uniform the wall thickness. Special machinery and methods of boring, developed by this Company during the past 5 years, are used to drill the hole straight and centered on the true axis of the drill collar. The regular shop inspection requires that a ten-foot test bar, only 1/8-inch smaller in diameter than the bore shall pass freely through.

BAASH-ROSS TOOL COMPANY

Cross section of Baash-Ross "Trubore" Drill Collar showing ten-foot test bar passing through circulation hole.



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Baash-Ross Trubore Drill Collars are the result of years of specialization, years spent in developing and perfecting equipment and methods for drilling the circulation hole straight and centered on the true axis of the drill collar. We believe that these drill collors are the truest that can be made and have given them the name "Trubore".

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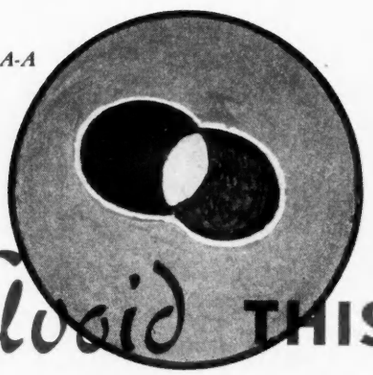
Section A-A



Avoid THIS CONDITION *Specify*

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An inaccurately drilled circulation hole results in unbalancing a drill collar by leaving a thicker body of metal on one side of the center than on the other, as shown in Section A-A. The enlarged area (B, in the cross-section) is caused by the misalignment of the two holes, which are ordinarily drilled from opposite ends toward the middle. In addition to weakening the drill collar, the shoulder frequently formed sets up eddy-currents in the circulation stream which cause sand cutting and further weakening at this point.

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THE OIL WEEKLY

FOR OIL AND GAS PRODUCERS
AND PIPE LINE MEN

ENGINEERING NEWS STATISTICS

WARREN L. BAKER, Editor

. . . this Week

THE Mid-Continent refined market is in splendid condition, in fact the best at this season in many years. Prices are unchanged, but steady. Heavy buying during late September and early October has left many storage tanks empty. This condition promises that earnings will show improvement over recent past winter months. **Page 43.**

THAT the crude oil market is also in good condition in the Mid-Continent is shown by the fact that well connection solicitors again are quite active in the East Texas field. Curtailment of the hot oil volume, of course, has influenced this situation, but is not the most important factor, which is the desire by many companies for additional crude to meet demands.

THE Rocky Mountain States have a known petroleum reserve capable of supplying the area's own consumption demand for the next 30 years, it is estimated by W. W. Boyer, consulting geologist of Casper. The reserve of light oil from proved fields in the district is estimated at 258,321,600 barrels, and the reserve of black oil at 253,217,000 barrels, or a total of 511,538,600 barrels. It is probable that deeper drilling will discover more oil, but such possibilities have not been considered by Mr. Boyer in his survey of the crude oil status of the Rocky Mountain region. **Page 19.**

A NUMBER of changes in the international crude oil market may result from the Ethiopian-Italian war, if sanctions are applied, or if the Mediterranean becomes the battlefield. **Page 8.**

THE Texas Railroad Commission has revoked its order fixing the allowable of sweet and sour gas in the Texas Panhandle, which was to become effective November 1. This procedure was necessary because of numerous attacks upon its validity that now are pending in court. **Page 9.**

THE entire Texas gas conservation law has been stayed in district court at the request of the state. This action was taken so that state courts could rule on its validity before federal courts could consider several cases scheduled to come up soon. **Page 9**

THE Texas Legislature is faced with the necessity of raising some $15,000,000 a year additional revenue, and the oil industry in the nation's most active state apparently is to receive more tax burdens to carry. Several bills pending in the House include taxes on the oil industry, probably the most important are two omnibus bills which would raise taxes on all industries. Among "single shot" bills introduced are some that would increase taxes on oil and gas.

TO DATE eleven oil wells have been completed in the Rodessa field without a failure. Last week two wells were finished, one of which is believed to be the largest producer yet completed. It flowed 240 barrels an hour through a 1¼-inch choke. Interest now is centered in several outposts due to test the producing formation soon. Upon the outcome of these tests hinges immediate future activity in the region.

A NEW potential gauge of 305 Wilcox sand wells in the Oklahoma City field reveals a decline of 41.39 percent since last April. A wide open gauge on 201 of the wells showed a decline of 24.95 percent, while 104 wells took a decline curve production test and dropped more sharply. The field now is estimated to have a potential of 242,984.25 barrels from these 305 Wilcox sand wells compared with 414,558.60 barrels in April.

FREQUENTLY air enters gravity oil gathering systems due to tanks becoming empty. When this occurs the system is very effectively tied up, and it may be days before the air can be worked out and flow restored to its former smoothness. So as to overcome these disadvantages of air-bound gravity systems, one East Texas pipe line company has worked out a system whereby the manipulation of only valve takes care of the situation. **Page 28.**

WATER flooding oil fields to obtain production not procurable by pumping now is being used in southern Kansas and northern Oklahoma, and the practice is expected to spread over this district. The first systematic flood in the Mid-Continent was started in 1931, but it has been only during recent months that many properties have been placed under the flood process. Naturally, many problems arise when starting flooding operations, particularly in a new area like south Kansas and north Oklahoma. Suitable sands, permeability, porosity, regional extent, physical problems, and water conditions are but a few of the more important to be considered. Therefore, a survey of the Mid-Continent water flood operations and likely problems are of interest. **Page 31.**

The Oil Man's Calendar

NOVEMBER
4-5 *Independent Petroleum Association of America, Annual Meeting, Dallas, Texas.*
11-14 *American Petroleum Institute, Annual Meeting, Biltmore Hotel, Los Angeles.*
California Natural Gasoline Association, Los Angeles.

DECEMBER
10 *Mid-Continent Oil & Gas Association, Tulsa, Oklahoma, (Date tentative).*

MARCH, 1936
19-21 *American Association of Petroleum Geologists, Tulsa, Oklahoma.*

APRIL
16-17 *National Petroleum Association, Cleveland, Ohio.*
20-25 *Oil Equipment & Engineering Exposition, Houston, Texas.*

MAY
16-23 *International Petroleum Exposition and Congress, Tulsa, Oklahoma.*

May Change Markets

SANCTIONS AGAINST ITALY MAY CAUSE IMPORTANT READJUSTMENTS

NEW YORK.

INTERNATIONAL difficulties between Ethiopia and Italy, whereby the latter nation has incurred the disapproval of England and France as a result of its military policy in Ethiopia, may bring about important changes in that part of the world oil market represented by Italian consumption.

Development of one of several things will have potentialities of changing Italy's sources of crude and refined oil products. If the United States sees fit to back the play of the League of Nations to the extent of declaring an embargo on petroleum and petroleum products destined for Italy, one of Italy's important sources will be shut off. Outside of official government action, if Standard Oil Company of New Jersey entertains with favor a proposition from Royal Dutch-Shell interests to refrain from making shipments to Italy, the checkmate against Italy's receiving supplies would be partly as effective. If Italy is unable to convince exporters of her ability to pay for petroleum supplies, in other words, if she is unable to exhibit a satisfactory credit condition of her treasury, restriction of shipments to Italy will be more or less automatic.

Press dispatches from Paris, France, state that some Rumanian oil producers have suspended shipments to Italy due to the fact that the latter nation is 10 million lei in arrears in payments. The items did not state, however, what percentage of the bulk of petroleum and petroleum products exported to Italy was represented by those Rumanian exporters who had suspended shipments, and considering the source of the dispatches, Paris, it is not impossible for them to be slightly propagandic in nature, as France's resentment of Italy's Ethiopian policy is well known.

On the other hand, Italy claims from five to seven billion lei in foreign securities and credits have been surrendered to the government. The financiers of France come back at this claim with the statement that even if economic sanctions were not in effect, Italy's gold reserve of four million lei would be spent in a few months due to the natural rise in prices of goods shipped a nation at war.

Regarding the likelihood of an agreement between Standard Oil Company of New Jersey and Royal Dutch-Shell interests and their respective associates, nothing definite has been announced. It is known, however, that Viscount Bearsted, chairman of the board of Shell Transport & Trading Company, and Andrew Agnew, director in that organization, recently arrived in New York, location of headquarters of the New Jersey interests.

Walter Teagle, president of Standard Oil Company of New Jersey, was quoted October 17 as declaring he had not been approached by Royal Dutch-Shell interests on a proposition having as its objective the cessation of oil shipments to Italy. He stated, moreover, that under existing conditions he saw no reason to interfere with regular shipments of oil to Italy, where a subsidiary of his company has been doing business for more than 40 years.

Yet, a recent issue of the Wall Street Journal declares that a high official in the New Jersey organization stated he expected his company would be approached by the Shell group on such a proposition.

Because petroleum is a domestic need in Italy and because shipments from the United States are not going directly to the war zone, the United States can continue shipments and at the same time stick to its avowed policy of neutrality with a degree of consistency. If European diplomatic representatives antagonistic to Italy argue into the matter very deeply, however, it is not too improbable that United States would yield to pressure and put the embargo into effect. Such a development would not be contingent upon the status of the United States as a member or non-member of the League of Nations.

Another angle of the picture is presented by Russia, a country which has had anything but a salubrious effect on the world oil mart. Russia has for several years exported petroleum at prices such as to make other exporters wonder how she could do it. Apparently volume of export has been of more importance to the Soviets than the margin of profit per barrel expressed in

Coming » Soon

AN ARTICLE ON

South Texas Reserves

FOREMOST AMONG QUESTIONS before the United States oil industry today is the status of the nation's future crude oil reserves. In keeping with THE OIL WEEKLY'S announced editorial plan of presenting detailed and authoritative articles on important districts, a survey of the prospects in South Texas has been completed and will appear before long.

This will be one of the most important contributions to the crude reserve series already published or to be published in THE OIL WEEKLY, as South Texas is one of the most promising areas in the nation. It is predicted that known oil fields in South Texas will recover 591,800,000 barrels from present producing horizons, yet this does not project accurately the ultimate importance of the region. Development in this sector of Texas, comprising an area approximately the size of the State of Oklahoma, is too young to permit positive predictions, but progress thus far assures the area will be a far greater factor in world oil reserves for years to come. During the past two years the change in standing of this district among producing areas of the nation has been most outstanding.

This crude reserve discussion will be presented in three parts, but unlike other similar articles presented previously in THE OIL WEEKLY will be published complete in one issue.

percentage. If Russia thinks such action may benefit her politically and financially it is easily within the bounds of imagination to visualize Russia attempting to ship all the oil to Italy that Italy needs. Barring antagonistic naval activity on the part of Turkey or Greece, such shipments would be relatively simple. However, Russia has urged strong sanctions against Italy.

WILL NOT INTERFERE

Administration plans no action on sales to Italy

WASHINGTON, D. C.

ADMINISTRATION officials will make no effort to interfere with oil companies that continue to sell to Italy, despite the recent announcement by the President that business men engaging in transactions with belligerents in the Italo-Ethiopian war do so at their own risk, it was learned at the White House Friday.

Inquiries as to the course to be pursued by the government were met with the answer that the neutrality legislation passed at the last session of Congress definitely limits the President's power to embargo exports. Possibilities of new legislation expanding the President's authority in this respect were seen in statements that any problems resulting from oil sales to Italy would be dealt with as they arose.

OUTPUT INCREASES

Natural gasoline in 1934 is up eight percent

WASHINGTON, D. C.

FINAL annual figures of the Bureau of Mines on natural gasoline for 1934 show that the year's production totaled 1,535,360 gallons, an increase of eight percent over the 1933 production. This gain brought the output back slightly above the 1932 level.

Three factors influenced materially the 1934 production: the continued downward trend in yields, the increased operations at stripper plants in the Texas Panhandle, and the increase in the capacity of the plants in the East Texas field.

Slight Decline

Due to necessity of manufacturing a more stable product and to increased use of lean gas in the Panhandle, recent years have brought a steady decline in the yield of natural gasoline. In 1934 the decline in yield was 0.06 gallons per thousand cubic feet of natural gas treated, or from 0.92 gallons per thousand in 1933 to 0.86 gallons per thousand in 1934. This lower yield was reflected in a reduction in output of about 100,000,000 gallons. On the other hand, production increased in the Panhandle from 183,800,000 gallons in 1933 to 256,200,000 gallons in 1934, and in East Texas from 20,200,000 gallons to 46,300,000 gallons. The gain in East Texas raised the rank of that field as a producer to approximately that of Osage County, Oklahoma, long an important factor in supply.

CALIFORNIA PRICES RAISED

LOS ANGELES.

UNION OIL COMPANY late in the afternoon of October 25 announced a marked increase in crude oil posted prices in fields of California. In some instances new prices were higher than posted before crude oil prices were reduced. For instance, 26 gravity crude at Signal Hill was raised to $1.02. Same gravity was fixed at $1.01 at Huntington Beach. At Playa del Rey 26 gravity new price was $1.05. Coalinga crude oil of 19 gravity has a new price of 72 cents. This same gravity at Kern River, Mount Poso, and McKittrick has a new price of 65 cents. At Kettleman Hills the new posted price is $1.22 for 37 gravity with top at $1.28 for 39 gravity. Mountain View oil of 31 gravity has a new price of $1.07 for 31 gravity.

Judging from information available, other major companies were greatly surprised at action of Union Oil Company and no one would predict action of other companies. It is practically certain retail prices of gasoline will be raised at once. Probably as much as two cents a gallon, maybe more.

Just what the action of Union Oil Company will result in is not known, but executives of major companies have been holding meetings all week in San Francisco.

During 1934 the total value of natural gasoline production was $60,523,000, an average of 3.9 cents a gallon. Although the average was 0.1 cent higher than in 1933, this increase does not adequately measure the improvement in natural gasoline markets in 1934 as it reflects low quotations the middle of the year.

The average price of a representative grade of natural gasoline was 3.50 cents per gallon on January 1, 1934, fell to 1.25 cents by midyear, but was 3.75 cents, or three times the low, on December 31. The increase in the price over the last six months of the year reflects chiefly increases in the prices for crude oil and gasoline, curtailment of crude oil production under the code, and increased demand for gasoline.

REVOKE GAS ORDER

Texas takes this action due to suits pending

AUSTIN.

THE Texas Railroad Commission has revoked its order fixing the allowable of sweet and sour gas in the Texas Panhandle, which order was issued on October 17 to become effective on November 1. The notice that the order had been abrogated was issued on October 23.

The commission found it necessary to follow this procedure because of numerous suits pending in the courts attacking the validity of the order and House Bill 266, the law under which the orders were issued.

Members of the commission declined to comment on the situation which apparently resulted from a conference between members of the attorney general's office and attorneys for gas companies joining the state in defense of the law and the orders.

Some 12 cases are to come up for hearing before a three-judge federal court in Houston on Monday, October 28. These suits involve every phase of the order.

One or two of the cases have been transferred back to the state courts although the federal courts have already issued interlocutory decrees. The effect of this transfer of these cases will be to allow these questions to be decided finally by the state courts before the federal court passes on them.

Since the new order was not to have become effective until the first of November, no change in the status of conditions will take place until that time.

Unless a new order is issued it appears that production of gas in the Panhandle area will continue in the same manner as it was taking place before House Bill 266 was enacted.

GAS LAW STAYED

So Texas courts can rule first on its validity

AUSTIN.

THE entire gas conservation law, House Bill 266, was stayed in an order granted by Judge W. F. Robertson in 126th District Court last week.

The order was issued in a suit filed by the attorney general against Palo Pinto Gas Company operating in the Strawn field, Palo Pinto County, seeking an injunction to enforce the company's compliance with Railroad Commission orders issued under provisions of the new law.

On motion of the state the court entered a stay order suspending the enforcement of the gas conservation law throughout the state.

"We took this action to stay proceedings before a three-judge Federal Court that will sit in Fort Worth on November 4," Attorney General McCraw announced.

"These proceedings were instituted by Palo Pinto Gas Company and attacked the constitutionality of the conservation law. The Federal Court already has granted a temporary restraining order against the law."

"We hold firmly to the belief that the state courts should rule first upon the validity of a state law of such magnitude."

McCraw said that the proceeding instituted by the state was necessary to give the state the primary right to establish the constitutionality of the conservation law in state courts.

"The entire law had to be suspended because previous stay orders suspended only the enforcement of the law in the Panhandle field," McCraw said. These orders were issued to Texoma Natural Gas Company and Texas Panhandle Pipe Line Company.

We Went to Mexico

GEOLOGICAL MEETING AT MEXICO CITY WAS HIGHLY SUCCESSFUL

By DR. J. BRIAN EBY

THE first meeting of the American Association of Petroleum Geologists to be called outside of the United States was held in conjunction with the Seventh Annual Field Trip of the San Antonio Geological Society, October 16-20, 1935, in Mexico City, Mexico. The registered attendance was 125 geologists and 75 ladies, but conservative estimates placed about 300 persons attending the technical sessions. As the last preceding midyear meeting held in New York in 1926 drew only about 135 persons, the large number present in Mexico City is taken as distinct evidence of the growth of the association and the return to normal conditions in the petroleum industry. The majority came from Texas, with the San Antonio and Houston Geological Societies furnishing most of the delegates. There were registrations from Texas, California, Colorado, Kansas, Oklahoma, Louisiana, Ohio, Missouri, New York, and from such distant points as London and The Hague. Many of the oil companies recognizing the value of the technical information presented sent their geologists to the convention.

They came by automobile, by train, and by air and nearly in the relative proportions of 75 percent by auto, 20 percent by train and five percent by air. The new Pan-American highway, not yet opened to the public, was made available by official dispensation and about seventy cars made the entire route from Laredo to the city, 1229 kilometers (767 miles).

The committee of the San Antonio Geological Society, that made the preliminary contacts and carried the burden of details, was headed by its president, Joe M. Dawson, assisted by William G. Kane, of Saltillo, Mexico, Philip Schoeneck, Laredo, and William Spice, San Antonio. The president of the American Association of Petroleum Geologists, A. I. Levorsen, and Business Manager J. P. D. Hull, actively participated in the arrangement of the convention.

The Geological Institute of Mexico formed a reception committee for the occasion composed of the following officers and members: President, Sr. Ing. Manuel Santillan, Sub-Secretary of National Economy and director of the Geological Institute of Mexico; vice-presidents, Sr. Ing. Jose G. Aguilera, former didrector of the Geological Institute of Mexico, dean of Mexican geologists; Sr. Ing. Ezequiel Ordonez, former director of the Geological Institute of Mexico; and members, Sr. Jose D. Baez, Chief of the Petroleum Department of National Economy; Sr. Ing. Teodoro Flores, geologist of the Geological Institute of Mexico and professor of petroleum geology, Faculty of Engineers; Sr. Ing. Hermion Larios, geologist, Geological Institute of Mexico; Prof. Dr. F. K. G. Mulleried, geologist, Geological Institute of Mexico; Sr. Ing. Alfonso Barnetche, geologist, Geological Institute of Mexico; Sr. Ing. Juan B. Gibson, geologist; Sr. Ing. Jenaro Gonzalez, geologist, Geological Institute of Mexico; Oliver B. Knight, geologist, Huasteca Petroleum Company; E. C. Borrego, superintendent of production, Mexican Petroleum Company; Lowell J. Ridings, president General Minerals, Inc. S. A.

The attending geologists take this means of extending their especial appreciation to Joe Dawson, Bill Kane, Lowell Ridings and to Sr. Ing. Manuel Santillan and Sr. Ing. Ordonez for their efforts in behalf of the meeting and trips. Sr. Ordonez, the discoverer of the Tampico oil fields and dean of Mexican geologists, not only gave an excellent paper on the "Principal Physiographic Provinces of Mexico" but accompanied every field trip, explaining details in perfect English.

The opening session of the convention was addressed by the Hon. Sr. D. Cosme, Hinojosa, governor of the Federal district, by Mr. Henry Norweb, legal advisor to the American ambassador who was absent from the city, and by Messrs. A. I. Levorsen and Joe M. Dawson. This and following meetings were held in one of the lecture rooms of the beautiful marble National Theatre (Palace of Fine Arts).

Papers were read at the technical sessions as follows, "Synopsis of the Geology of Mexico," by Sr. Ing. M. Santillan.

"Areal Geology of Parts of the Rio Grande Border Provinces of Northeastern Mexico," by William G. Kane.

"Post-Eocene Stratigraphy of the Mexican Gulf Coastal Plain," by J. L. Tatum.

"Paleogeography of Parts of the Border Province of Mexico Adjacent to West Texas," by Dr. L. B. Kellum of the University of Michigan.

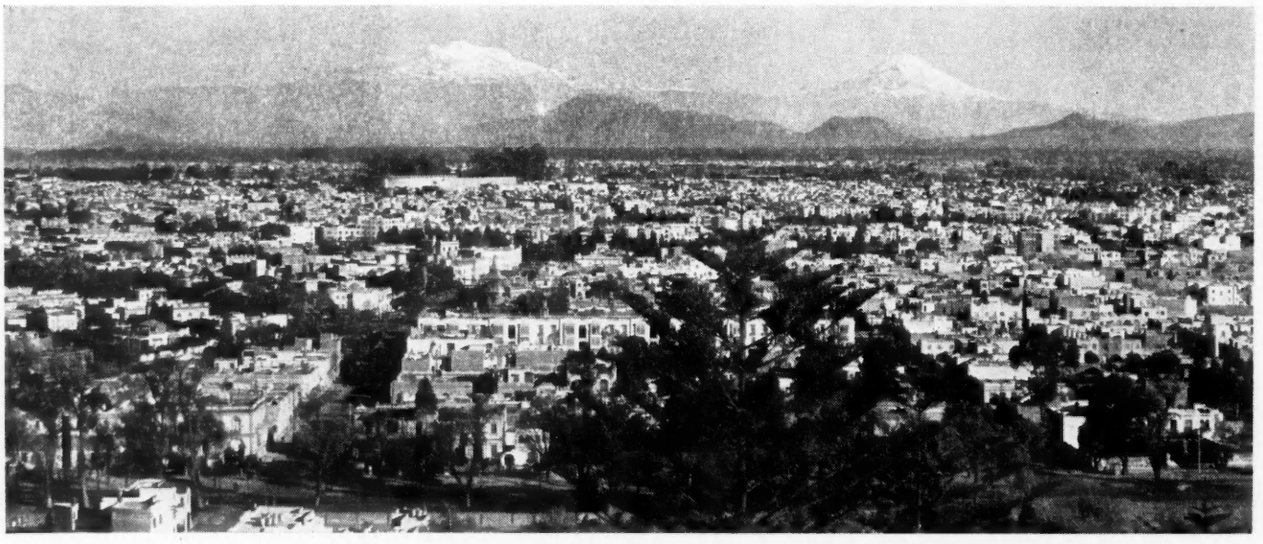
"Possibilities for Oil Production from Formations Older than Cretaceous in Mexico," by Thomas Callahan.

All these papers it is hoped will be published in due course in the volumes of the American Association of Petroleum Geologists bulletins.

In reporting the non-technical features of the convention I hope I may be pardoned for breaking down into informal and sometimes conversational language. Since this is written for those who did not make the trip I trust I will not impose on the patience of those who did.

The drive from Houston to Monterrey, via Laredo, is 498 miles, solidly paved and a comfortable one day trip. After checking in at the Gran Hotel Ancira, in the main ball room of which

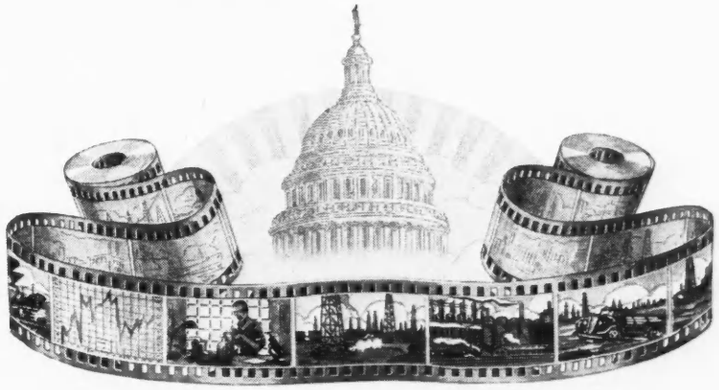
[*Continued on page 50*]



Panorama of Mexico City framed by its two historic peaks, Ixtlacihuatl (The Sleeping Woman) and Popocatepetl (The Smoking Mountain), both over 17,500 feet in height. View taken from Chapultepec Hill.

—Photo by Jesus Abicia.

The Changing Panorama



THE OIL WEEKLY'S COMPOSITE VIEW OF INDUSTRY

Edited by JACK LOGAN, Associate Editor

OIL company securities were conspicuously strong last week in the trading in the financial markets. A factor in the display of strength was the circumstance that in recent months the oil stocks had been consistently lagging behind the generally advancing market.

Favorable Earnings Reflected

Nevertheless, the stock market has continued highly selective and it would appear that the strength in the oils was due primarily to the industry's generally favorable situation and outlook. The oil companies for 1935 will quite likely show creditable earnings records, with possible exception of California concerns. And 1936 promises to bring similarly satisfactory results, at least in the opening months.

Markets Conducive to Profits

Back of the continued favorable earnings of oil companies east of California have been the comparatively strong markets, from well to service station. While crude prices have held steady at the long-established levels, product prices, wholesale and retail, have been similarly firm, at encouraging levels.

Even in the past several weeks, when declining demand of autumn was expected to bring a severe strain on the markets, gasoline tank car prices east of California have held steady to strong, around the peak levels of the year. The prices have been particularly better than in the fall of last year, and have been as high as any quotations of the past five years.

During 1935 as a whole, retail gasoline prices have been slightly lower than in 1934. But at present they are a little higher than a year ago. Moreover, the retail markets are expected to continue stabilized for some time, as the tank car market currently shows no indication of impending weakness.

Control Efforts Successful

Contributing to the favorable markets of most of this year have been, particularly, the generally successful results in control efforts, at both wells and refineries. Through these restraints, supply has been curtailed not merely to conformity with demand but to levels below the market requirements. Consequently there have been important withdrawals from storage in meeting the existing demand.

Stocks Lowest in Eight Years

In fact, present stocks of all oils are lowest for more than eight years. Aggregating 558,053,000 barrels on September 1, they were back to the level of April, 1927, and were down 142,755,000 barrels from the peak of 700,808,000 barrels reached June 1, 1930. In the period of over five years since the latter date, the nation's above-ground oil stocks have declined continuously, with but few interruptions.

That long and steady cutting down of stocks has been effected, moreover, under particularly trying circumstances. The stocks have been cut despite the fact various flush fields were constantly straining at the tether, among them being East Texas, the unruly, and Oklahoma City, and some others. The flush fields were held in restraint so rigidly that demand was partially met by withdrawals from storage, even while the depression was pushing consumption temporarily downward.

Stock Reduction Rewarded

The long sustained reduction of stocks appeared at times to be like the drive of a football team making numerous first downs without winning—making undisputed progress, but failing to score with favorable oil prices. But at last the first downs have begun to be rewarded, as they should be in the long run, with pay-offs. The past stock reductions and the current favorable inventory position undoubtedly are important factors in the present comparatively strong markets enjoyed by the oil industry.

Industry Gets "Breaks"

As in the case of the aggressive football team, the oil industry in its determined reduction of stocks has at length been rewarded, morover, by a few favorable "breaks," that are encouraging. It has been able to profit, for instance, by a brisk recovery in consumption of oils. It has profited, also, by the fact

that discoveries of important oil fields have been comparatively scarce for several years; although 1935 brought a pronounced revival in discoveries.

Oil Demand Increases

For the first eight months of 1935 the total demand for all oils ran 5.2 percent higher than in the corresponding period last year. It is indicated that for 1935 as a whole a similar increase will be shown. Contributing to the improvement in total demand, there have been gains in both export and domestic requirements, with the foreign business showing a sharper increase than the domestic.

Gasoline Use Sets Record

While the total domestic demand has run a little over five percent higher this year than last, the industry's chief revenue raising product, gasoline, has shown an even more pronounced increase of demand —a gain of about 5.4 percent for the first eight months. The domestic gasoline consumption in 1935 has been running, indeed, at the highest levels on record.

The rise of gasoline consumption has been more pronounced, furthermore, with the advance of the year. While it was running only about two percent ahead of 1934 in the early months of the year, the domestic gasoline demand in August, 1935, was almost 10 percent greater than in that month of last year.

New Fields Less Menacing

Regarding discoveries of new, flush fields, that might overproduce and darken the oil picture, the anxiety of recent months has materially subsided. The Rodessa field was for a while considered a potential second East Texas in area and productivity. And it still has possibilities of being a large and important field, not yet having been defined. However, the thickness of the pay lime has been established as smaller than many expected, through drilling down into the salt water sand below the lime; and consequently the field now appears as a less formidable menace.

Anahuac Being Defined

Similarly, some other new fields are proving less dangerous than originally expected, from a market standpoint. The Anahuac field of the Texas Gulf Coast, for instance, apparently will be materially smaller in area than anticipated for a while by some. And with the prospective productive area narrowed, it appears that the field will be largely in the hands of only a few operators, and not divided among numerous owners, as at first considered possible. Consequently, there is less likelihood of disorderly development. For a while it appeared that Anahuac might be a field of 10,000 to 15,000 acres. Now the more liberal estimates are around 6000 acres, with about 3700 acres proved and some chances existing for substantial extensions.

East Texas Five Years Old

Meanwhile, some of the older fields are gradually losing some of their vigor. Gauging of East Texas wells recently has revealed some further decline in the big field's producing ability. Indeed, such evidence is hardly needed, considering that the field had its fifth birthday anniversary on October 3.

In the five years since that date, the remarkable field has produced approximately 765,000,000 barrels of oil, it is indicated by Bureau of Mines figures, supplemented by estimates for the past two months. According to early estimates, it was supposed to produce about two billion barrels before exhaustion. (Some experts later revised that estimate upward). Thus the field already has produced one third of the estimated two billion-barrel ultimate recovery. Therefore the field naturally is less menacing than formerly from a market viewpoint.

California Less Threatening

Likewise, some of the California fields now appear less threatening, after having shown smaller vigor than expected in the current overproduction period. Complete or partial opening of fields in the past several months, in absence of effective proration, has indicated that the state has a lower producing capacity than previously believed. In fact, the state's actual production record in recent weeks, with proration failing to function, indicates that California could not produce greatly in excess of market requirements over a protracted period.

Markets Firm Past Week

While the California markets continued depressed last week, the market picture for the rest of the country remained bright, and in fact developed lighter hues in spots. At Mid-Continent refineries tank car prices continued around the best levels of the year, holding steady in Oklahoma and North Texas, and improving further in East Texas.

Gaining one-eighth cent a gallon, the East Texas quotations on the two lower classifications of U. S. motor gasoline (below 62 octane and 62-67 octane) rose to 4¾ and 5¼ cents, thereby equaling the prevailing prices in the North Texas and Group Three, Oklahoma, regions. The premium grade, 68-70 octane, already was the same in the three sections at 5⅝ cents a gallon.

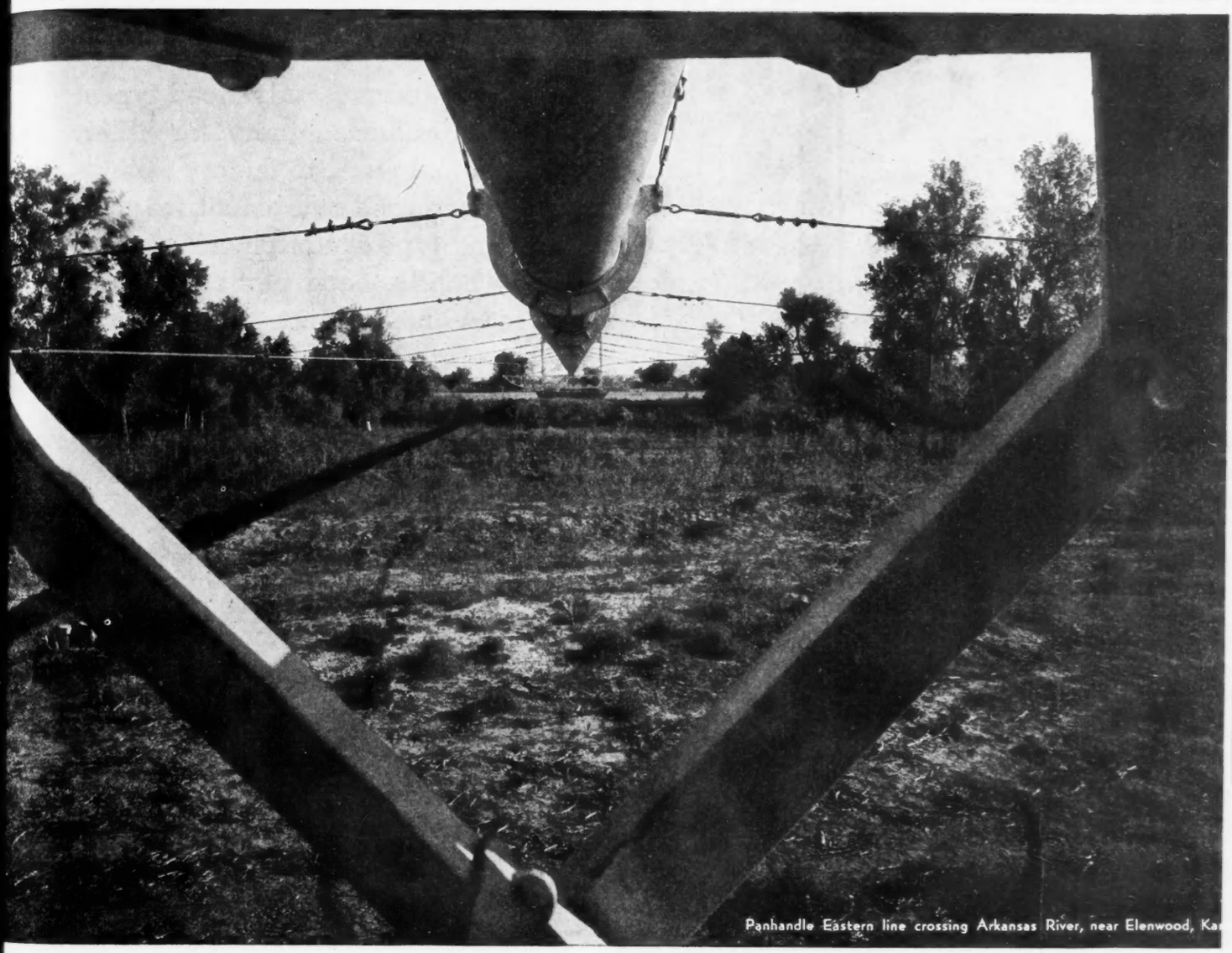
Kerosene prices in the Mid-Continent last week also gave evidence of a strong market, quotations having been one-eighth cent a gallon better than in the previous week in all areas. A new price of 3¼ cents prevailed in East Texas and North Texas, while the new Group Three price was 3⅜ cents.

The continued strength of the Mid-Continent tank car market appears to be based on several favorable circumstances. In the first place, gasoline consumption has been exceeding even the more optimistic predictions, under the influence of unusually favorable weather conditions until last week. Emergency buying therefore was necessary for some of the larger companies, and prices were bid upward.

A second market stimulating factor has been the rigid control that has been exercised over refinery operations. In the week ended October 19 the total stocks of finished gasoline declined further by 138,000 barrels, coming down to 41,799,000 barrels. At that level, the finished gasoline stocks were approximately a million barrels lower than a year previously, despite the fact that demand has been running higher this year than last.

A third circumstance conducive to a firm Mid-Continent tank car market has been the continued decline of hot oil producing and refining in East Texas. Within a few weeks, the illegal output has been brought down by almost one-half, in a determined drive of the Texas Railroad Commission against violations. As compared with about 50,000 barrels per day in the early part of October, it was indicated last week that the East Texas hot oil output had been brought down to 25,000 to 30,000 barrels daily.

YOUNGSTOWN



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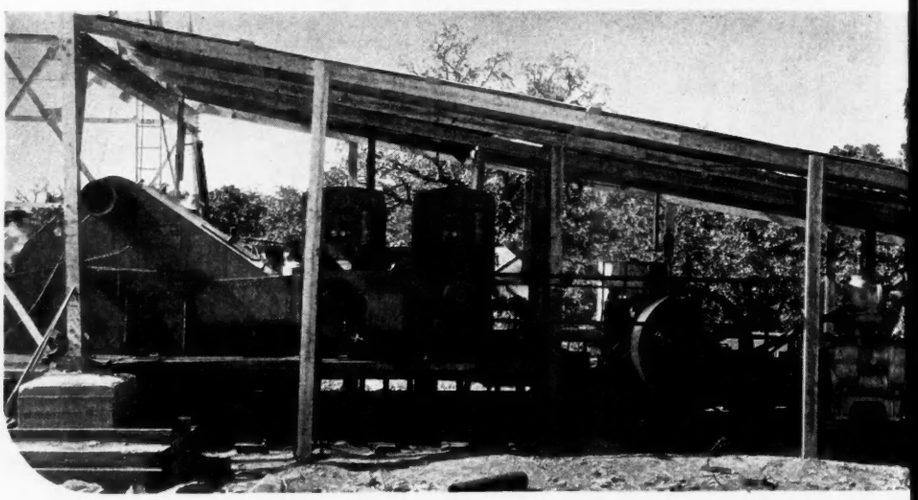

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CHASE - RUSSELL - AND OTHER ACTIVE MID-CONTINENT AND GULF COAST POINTS

MEN IN THE INDUSTRY'S NEWS

E. G. SEUBERT, president, Standard Oil Company of Indiana, last week headed a group of company officials that inspected the company's holdings in the Gulf Coast. Pan American Refining Company and Stanolind Oil and Gas Company are subsidiaries of the company. In the party were: Max G. Paulus, vice president; R. H. Soper, assistant to the vice president; and L. L. Stephens, general counsel of Standard Oil Company of Indiana, Chicago; A. W. Peake, chairman of the board; Frank O. Prior, president; E. F. Bullard, vice president; H. W. Klein, general superintendent, and A. L. Soliday, manager of exploration, Stanolind Oil & Gas Company, Tulsa.

GORDON M. GRIFFIN, chief petroleum engineer for the Texas Railroad Commission has resigned, effective October 21, to engage in consulting work. Griffin has had charge of the commission's Petroleum Engineering Department for the past two years. He will maintain offices in the Littlefield Building in Austin, handling the properties of Hamill, Smith & Ogden, in Southwest Texas. This work, however, will require only a portion of his time, and the remainder will be devoted to other work. Griffin first joined the commission staff in 1932, and save for one brief period has been in the service constantly since that time. His work has carried him into every oil field in Texas, and given him an opportunity to familiarize himself with conditions in each area. V. E. Cottingham succeeded Griffin as head of the commission's engineering staff.

JAS. S. MAXWELL, JR., scout for Continental Oil Company in North Texas for a number of years, has been transferred from Wichita Falls to Midland to cover the east portion of the West Texas Permian Basin, relieving John Cram, who will be stationed at Wichita Falls.

M. T. HALBOUTY, chief geologist and petroleum engineer for Glenn H. McCarthy Producing Company, Houston, was married to Miss Lesly Carlton of Fort Worth, Texas, October 19, 1935, after the T. C. U. and A. & M. football game. Mr. and Mrs. Halbouty were married by Dr. Waits, president of T. C. U.

T. JEROME SWEENEY of Sun Oil Company, Dallas, has been transferred to Odessa, where he will be superintendent in West Texas and New Mexico. He will return to Dallas November 1 to take Mrs. Sweeney and son, Tommy, to their new home.

HARRY LEYENDECKER, chief scout for Tide Water Oil Company, and George Goad, crude oil representative for Tide Water Oil Company, made a business trip through Coastal Louisiana the past week end.

JOHN H. CROMWELL, research chemist at the Okmulgee refinery of Empire Oil & Refining Company, has been transferred to the Henry L. Doherty laboratories at Camden, New Jersey.

V. E. COTTINGHAM PLACED IN CHARGE OF TEXAS RAILROAD COMMISSION PETROLEUM ENGINEERING STAFF

IS GEOLOGIST OF 15 YEARS EXPERIENCE IN TEXAS OIL FIELDS

V. E. COTTINGHAM has been placed in charge of the petroleum engineering staff of the Texas Railroad Commission with the title of Director of Oil and Gas Production and Accounting. He replaces Gordon Griffin, who has resigned to engage in consulting work with offices in Austin.

The new director is a petroleum geologist with 15 years experience, most of which has been spent in Texas oil fields. He was graduated from Oklahoma University in 1920 and spent a short time thereafter in post-graduate work. He was then employed by Empire Oil & Refining Company in Oklahoma, and was sent to Texas in 1923 to handle appraisal work for this concern, and was district geologist until 1925 with offices in San Angelo. He then went with Shell Petroleum Corporation as district geologist, transferring his office to Carlsbad, where he had charge of West Texas and New Mexico operations. Immediately prior to the time he went to work for the Texas Railroad Commission in September, 1931, Cottingham was engaged in consulting work in San Angelo. His first job with the commission was in East Texas where he handled one section of the field for two years. Later he was transferred to West Texas where he was in charge of that district, holding the post of chief petroleum engineer since last spring.

R. D. ROBEY, JR., vice president of Olson Drilling Company, was feature speaker at the regular monthly meeting of the Tulsa Purchasing Agents Association. Robey stated that while great improvements have been made in rotary drilling since completion of the famous Lucas gusher at Spindletop in 1901, even greater strides are to be made in the next five years. He predicted that tomorrow's rotary rig would be almost fool proof and capable of drilling to 15,000 feet. Increased use of Diesel fuels may also be expected, Robey said.

ROBERT "BOB" INGLISH of Hobbs, New Mexico, has been transferred to Dallas, where he will be district superintendent for Sun Oil Company.

COLONEL E. O. THOMPSON, chairman of the Texas Railroad Commission, was feted by his friends from all parts of Texas Tuesday night in Houston. It was said to be the largest testimonial dinner ever tendered a public servant in the city. The majority of the men in attendance were oil executives. For three hours a procession of speakers extolled the public service rendered by Colonel Thompson.

L. W. STORM, who has been district geologist for Sun Oil Company at Houston, resigned on October 15 to join the Houston staff of Schlumberger Well Surveying Corporation.

A. C. EASTERWOOD, JR., scout for Tide Water Oil Company in the Louisiana Gulf Coast, is now on his vacation in Fort Worth, Texas.

CHARLES GILL MORGAN, geologist on the Second Byrd Antarctic expedition, was principal speaker before the Tulsa Geological Society last Monday evening. He declared that investigation showed the only mineral substance in Antarctica is a great expanse of coal.

V. E. LEDGER, who has been connected with the accounting department of Huasteca Petroleum Company at Tampico for the past 15 years, has resigned and returned to the United States.

D. W. HARRIS, vice president of Arkansas-Louisiana Gas Company, was elected president of the Louisiana-Arkansas Division of the Mid-Continent Oil & Gas Association at the annual membership meeting and executive committee meeting in the offices of the Association in Shreveport October 21. J. R. Crawford, J. S. Hasson, W. L. Stratton and

L. M. Moffitt, all of Shreveport, were elected vice presidents. R. F. Sebastian and A. R. Campbell of Shreveport, were elected treasurer and secretary respectively.

CHARLES NOBLE, chief scout for Superior Oil Producing Company, Houston, is the father of a baby girl.

A. L. WILHELMI, Kirby Petroleum Company, Houston, is the father of a new five-pound baby girl.

DIED:

RALPH W. HOWE, 48, vice-president and general manager of Atlantic Pipe Line Company, died October 23 at a Dallas hospital from injuries received in an auto mishap on October 9 while enroute from Dallas to Houston. He suffered a fracture of the vertebrae, and was considered definitely on the road to recovery until the lodging of a blood clot in the pulmonary artery developed a few hours before his death. Howe was a native of Cornell, New York, and was a graduate of Cornell University. He served as an engineer for Atlantic Refining Company for a number of years, and had charge of the company's pipe line system in Louisiana prior to the removal of Southwestern headquarters from Shreveport to Dallas to build and operate a trunk line system from West Texas to the Gulf Coast. Howe was chairman of the American Petroleum Institute Committee on Standardization of Steel Tanks for Oil Storage. Survivors include his wife; a daughter, Miss Gene Maria Howe, and a son, Ralph W. Howe, Jr.

JAMES W. CREE, 60, of Kimmel and Cree, Inc., oil operators of Tulsa, died October 22 at a hospital in Pampa, Texas. He had been ill some months. After funeral services at Tulsa on October 23, the body was taken to Woodsfield, Ohio, his birthplace, for interment. His mother, three sisters and two brothers survive.

CHARLES M. POWER, general sales manager of The Cleveland Chain and Manufacturing Company, Cleveland, Ohio, died on October 15.

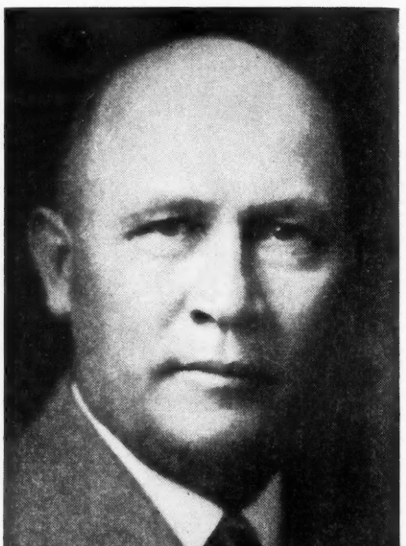
CONTINENTAL TRIP

Houston.—The weekly meeting of the operating committee of the Continental Oil Company, usually held at the headquarters at Ponca City, Oklahoma, was held October 22 at the company's offices in Houston. On subsequent days the committee and a group of officials of the company made inspection tours of the Continental company producing properties along the Louisiana-Texas Gulf Coast and in Southwest Texas.

Officials attending the Houston meeting and making the field trips included the following: Dan Moran, president; W. W. Bruce, executive vice president and president of the Texon companies; Walter Miller, vice president in charge of manufacturing; G. F. Smith, treasurer; H. J. Kennedy, general manager of marketing; Harold G. Osburn, manager of the manufacturing department; J. G. Dyer, manager of production; E. O. Bennett, assistant manager of production; P. H. Kuhn, manager of railway sales and traffic department; W. H. O'Connor, purchasing agent; T. D. Harris, superintendent of motor transportation; L. J. Morgan, superintendent of sales administration; L. L. Davis, supervisor of the manufacturing department; W. E. Haggard, superintendent of the land and scouting department; L. F. Athy, chief geophysicist; H. K. V. Tompkins, manager of the land and exploration department; C. E. Fehrenbach; Burney Braly, general attorney; T. H. Lawson, manager of the southern sales region; James J. Cosgrove, chief of the legal division; George Olds, assistant to the president.

H. J. LOCKHART DIES

Parkersburg, W. Va.—H. J. Lockhart, pioneer oil man and supply manufacturer of this city, died early last week from a heart attack. His entire career was spent in close association with the oil industry, receiving his first contact as a messenger boy with the Oil City Stock Exchange, where he worked during his school vacations. Later he was a roustabout in the Pennsylvania oil fields, then he joined Standard Oil Company of Ohio. In 1903, he joined Security Oil Company at Beaumont, Texas. Next he was superintendent for Producers Oil Company at Markham, Texas, and later at Goose Creek. His connection with this company carried him to Shreveport, La., and then to Houston, where he was the first purchasing agent of the company. When Producers Oil Company became The Texas Company, Mr. Lockhart remained in the organization. It was in 1917 that he joined Parkersburg Rig and Reel Company, Parkersburg, West Virginia, of which he was president at the time of his death. He was one of the organizers of the American Petroleum Equipment Suppliers Association during the NRA code and served as a director. He also was active in the American Petroleum Institute.



H. J. LOCKHART

HUMBLE TRANSFERS

Houston. — Several changes were made in the supervisory forces of the Humble Oil & Refining Company during the past month.

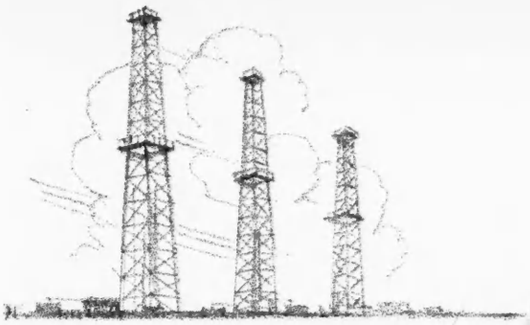
Homer Harris was transferred from the Throckmorton district to the McFaddin district as tool pusher in charge of drilling operations; G. R. Van Landingham was transferred from the West Texas division office at McCamey, Texas, to district chief clerk and warehouseman for the Hurdle, Big Lake, and Yates district; John R. Doggett was transferred from the Hastings district to Anahuac as district chief clerk and warehouseman; R. A. Barger, McCamey, Texas, was promoted to district superintendent in charge of Hurdle, Big Lake, and Yates district; B. B. Gregory was transferred from the Holliday district to Pampa as district chief clerk and warehouseman; A. L. Moore was transferred from the Gladewater district to Anahuac as district construction foreman; Harry Tenbrink was transferred from Wichita Falls to Holliday district as district chief clerk and warehouseman; A. H. Smith, superintendent, in charge of Goose Creek district, was also placed in charge of the Hull, Sour Lake, and Liberty districts in addition to his present duties; Sidney Martin was transferred from the Conroe district to Pledger as district chief clerk and warehouseman for the Pledger gas system; J. S. Smith was transferred from Houston to Pledger as district gas superintendent in charge of the Pledger gas system, and W. L. Cupit was transferred from the Hull district to Hastings as district chief clerk and warehouseman.

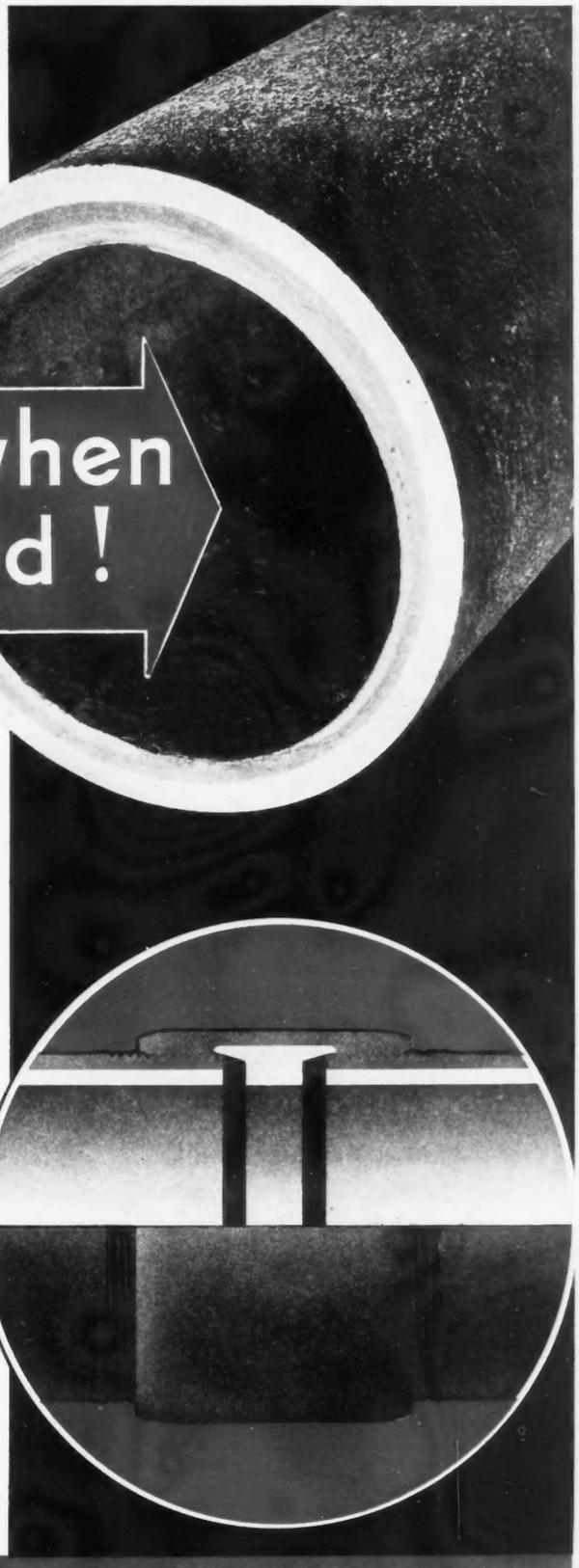
STOP SALES TO ITALY

San Antonio.—Sale of crude originating in the Samfordyce field, Hidalgo County, to the Italian government will be discontinued by Valley Pipe Line Company, Dallas, which has a pipe line extending from the field to deep water facilities at Port Isabel, when existing contracts are fulfilled in November. The transportation company has a long term contract to supply crude to the Valley Port Refining Company, which will finish construction work late in November on a 5000-barrel capacity skimming and cracking plant at Port Isabel. This plant will absorb all crude that can be delivered by the carrier.

Cargo of 30,000 barrels of Samfordyce crude was loaded aboard tanker at Port Isabel for the account of the Italian government by the Valley Pipe Line Company last week, while stocks previously moved by tank cars to storage tanks at Corpus Christi will be drawn on by the tanker in completing its capacity load.

Italian agents have made inquiries within the past ten days for additional supplies of Southwest Texas crudes, specifically requiring that deliveries be made in United States Merchant Marine tankers. The usual purchase terms, involving the deposit of the entire cost of each cargo in a New York bank seven days in advance of the arrival of ship at loading terminal, prevail on the new inquiries.





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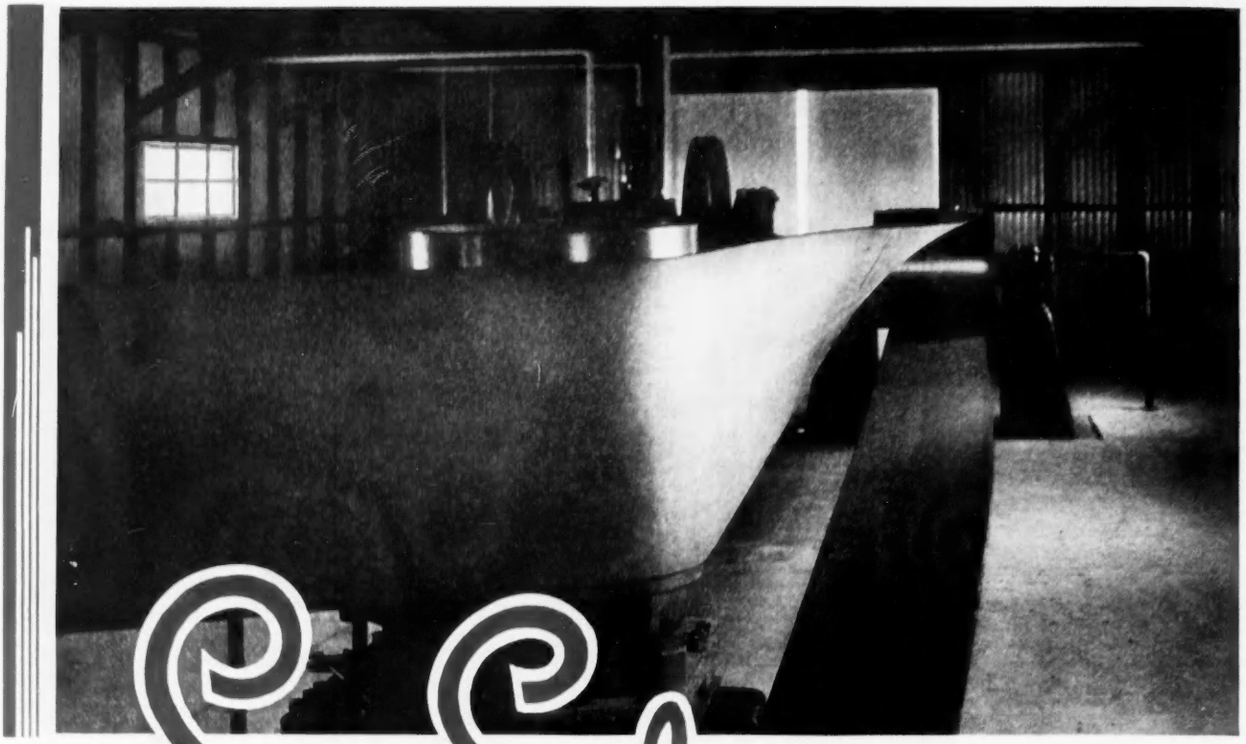

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Rocky Mountain Crude Oil Reserves

DUE TO SMALL MARKET CAN SUPPLY AREA'S OWN DEMAND FOR 30 YEARS

By W. W. BOYER, Consulting Geologist,
Casper, Wyoming

PART 1

In this article, the first of a series of two on the crude oil reserves of the Rocky Mountain district, it is estimated that the area has a reserve of 511,538,600 barrels, which is sufficient to supply the region's own needs for about 30 years.

The series presents a detailed analysis of a crude oil reserve study of each state comprising the region. In Part I, Montana, Colorado and Northwestern New Mexico are discussed.

THE Rocky Mountain district produced 17,308,000 barrels of oil in 1934. Market for 13 million barrels of gasoline was available to us but better than 33 percent was supplied by Mid-Continent and California refiners. The answer is adverse freight rates within our own province. We have plenty of oil "in sight."

The Rocky Mountain district includes the states of Montana, Idaho, Wyoming, Colorado, Utah, northwestern New Mexico and northeastern Arizona. We produce only a very small fraction of the total crude oil produced each year in the United States, but out of 53 fields produced last year, less than one fourth of that number can be considered as fully developed.

The peak of production came in 1923 with the rapid, unrestricted, development of the Second Wall Creek sand at Salt Creek. In that year 47,653,000 barrels were produced, 74 percent of which is directly attributable to Salt Creek. Since that year the decline has been steady, reaching a low of 15,708,000 barrels in 1933. The amount and trend of production from 1920 to 1934 is shown graphically by Figure 1.

In the period from 1862, when oil was first discovered at Florence, Colorado, to the present time, 82 oil fields have been discovered. The rate at which most of these fields were discovered is indicated by Figure 1. Of the 82 fields, 14 have only one well and are undeveloped for lack of market. It is true that the majority of the undeveloped fields are small, but they represent proved and probable reserves of considerable magnitude. In several of the producing fields, lower sands have been proved productive by one or two wells and are shut in awaiting better markets.

Salt Creek, in Wyoming, is the most prolific field in the Rocky Mountain district. Cut Bank, in Montana, exceeds Salt Creek in proved area, but cannot hope to equal it in production. In Wyoming, the most prolific state, the average area of 50 fields is 1400 acres, yet actually two thirds of the fields are less than 1000 acres in extent. The redeeming feature is that many fields have more than one productive horizon, which in effect, is similar to a separate pool.

Three types of oil are found in the district; according to the U. S. Bureau of Mines classification[1] they are paraffin base, intermediate base and hybrid base. However, the common practice is to divide the oils into two classes, light oil and black oil; light oil meaning oils of green color and gravity usually above 33° A.P.I., and black oil meaning oils dark or black in color, with asphalt and considerable sulphur content. Light oils in this district usually contain less than one percent sulphur, while black oils contain from 1½ percent to 4½ percent sulphur. Needless to say that for many years the black oils have been in disfavor with the refiners, but with the decline in light oil production and the perfection of technique in utilizing low gravity asphalt oil for road building purposes, a considerable demand for black oil has developed. With few exceptions oil found in beds of Jurassic age, or younger, are classed as light oil,

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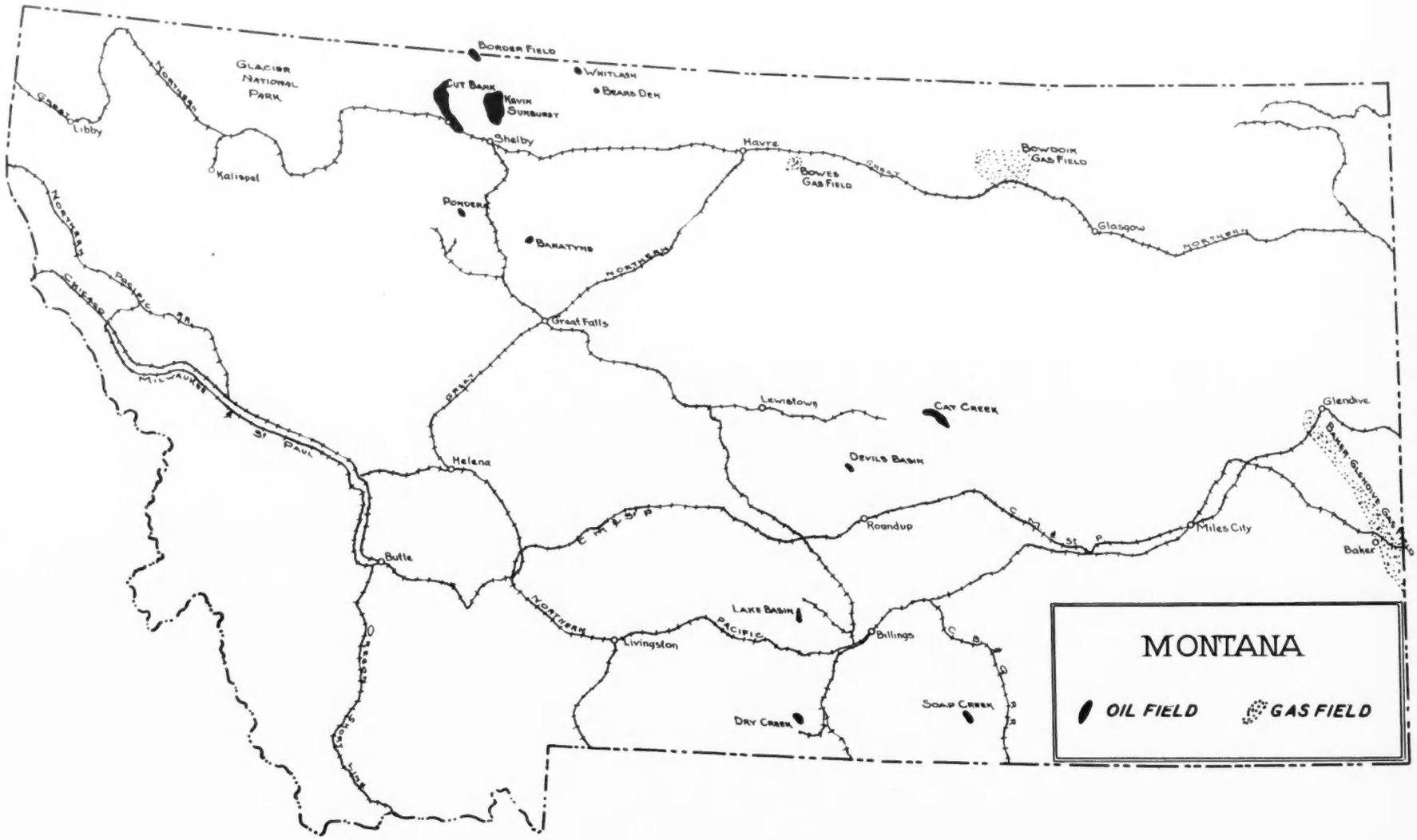

Map showing location of oil and gas fields in Montana

while oil found in beds of Triassic age, or older, is usually black oil.

The reserve of light oil from proved fields in the district is estimated at 258,321,600 barrels. The reserve of black oil is estimated at 253,217,000 or a total of 511,538,600 barrels. This reserve is sufficient to supply the region's own needs for about 30 years at the present rate of consumption.

In these, and following estimates, the writer has avoided, as far as possible, controversial questions. In some fields it is possible that deeper drilling will discover more oil but no attempt has been made to assign a number to the possibility or probability as it may be. Decline curves for the fields have been drawn where possible and estimates made of oil which will very probably be produced by present methods. Where not enough producing history is available, estimates are based on per acre yield reasonably to be expected for the type of field considered.

A detailed analysis of the reserves in each state follows:

Montana

PROVED RESERVES:

Last year Montana produced 3,612,000 barrels of oil, and consumed 2,353,000 barrels of gasoline. Exports to Canada amounted to 1,702,000 barrels, a little over one half of the entire production. If the entire production had been utilized in the state there would still be a wide gap between supply and demand. The deficiency was supplied by California, Mid-Continent and Wyoming.

Montana first joined the ranks of producing states with the discovery of oil at Elk Basin in 1915. The field is situated on the state line between Montana and Wyoming, with the most prolific part in the latter state. Reserves for the field are listed in the chapter on Wyoming. Real Montana producing history starts with the discovery of Kevin-Sunburst in 1922. The peak of production for that field and state coincide in 1926. Up to the present time 12 oil fields have been discovered, only seven of which have sufficient reserve to be interesting.

TABLE 1

Montana Reserves

FIELD	Light Oil, Barrels	Black Oil, Barrels
Border	410,200	
Cat Creek	1,176,900	
Cut Bank	45,000,000	
Dry Creek	15,000,000	
Kevin-Sunburst	10,500,000	
Pondera	2,700,000	
Soap Creek	.....	2,500,000
Other Fields	566,700	
Total Fields	75,353,800	2,500,000
Total State	77,853,800	

The known reserves for Montana are listed in Table 1.

Cat Creek field, in east central Montana, was discovered in 1920. The peak of production was reached in 1922 when 2,333,000 barrels were produced. The field has yielded 13,491,000 barrels of 48° A.P.I. oil, and has been one of the most profitable fields in the state. Last year it produced 230,000 barrels with an indicated future life of 10 to 12 years. The deepest well was drilled into the Quadrant formation, but no well has reached the Madison limestone. Deeper production may be found.

Cut Bank field, on the west side of the Sweetgrass Arch is in active development. At the date of writing, about 30,000 acres have been proved productive. Productivity is apparently due to lensing of the Cut Bank sand against the Sweetgrass Arch, and differential porosity. Although there are about 30 feet of sand, the upper part is hard and tight with usually only the basal 10 to 14 feet sufficiently porous to give up its contained oil. At the present time there are about 240 oil wells in the field. The field is not curtailed, and the pipe line runs are averaging about 6500 barrels a day, for an average of about 27 barrels per well. Development practice has been to drill one well to a 40-acre tract, located in the center of the 40 except in one or two areas where corner locations were drilled in the early development. Closer spacing will recover probably more oil but the cost

FIGURE 1

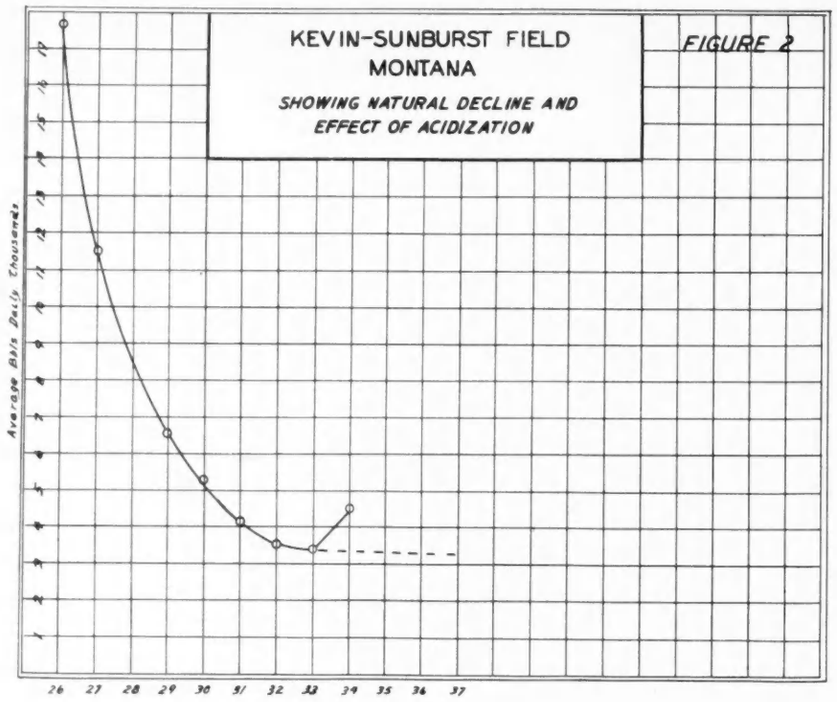
KEVIN-SUNBURST FIELD
MONTANA
SHOWING NATURAL DECLINE AND
EFFECT OF ACIDIZATION
FIGURE 2
Average Bbls Daily Thousands
26 27 28 29 30 31 32 33 34 35 36 37

FIGURE 2

would be prohibitive at the present price of oil. Only an occasional well has sufficient pressure and gas volume to flow naturally. The writer estimates that an average recovery of 1500 barrels per acre under present methods of production is all that is warranted by the facts. If the present rate of production can be maintained (which does not seem possible at this time), the estimated reserve is sufficient for 23 years.

Dry Creek field in southern Montana, southwest of Billings, is wholly owned by The Ohio Oil Company. Gas and oil production are found in sands of the Frontier formation and the "Dakota Group" of Upper Cretaceous age. One edge well was drilled to the Tensleep sand (Middle Pennsylvanian) at a depth of 6900 feet, but found water. Average drilling depth to the basal sand of the "Dakota Group" (Pryor conglomerate) is about 5800 feet. The oil is 51° A.P.I. The reserve shown for this field may be much too small as the field is greatly curtailed for lack of market.

Kevin-Sunburst field was discovered in 1922 and has produced about 29,000,000 barrels to date. Production was found in three horizons, in the Kootenai, basal Ellis and top of Madison limestone. Drilling depths range from 1400 to 2000 feet. From discovery to the peak of production in 1926, drilling was at a rapid pace and in that year the field averaged over 17,000 barrels daily. From this point on, decline was rapid and in 1933 the average daily production was only about 3400 barrels daily. However, in 1933, it was found that acid treatment would revive and increase production from the Madison limestone, and an active campaign of acid treatment was soon underway. Areas of Madison production were treated, some new wells were drilled, and as a result the production for 1934 rose to nearly 4500 barrels a day, indicating an increase of slightly over 1000 barrels daily. Figure 2 shows graphically the normal decline of the field and the increase due to acidization. It seems altogether probable that with better markets many new lime wells will be drilled.

Pondera is a relatively small field. The peak of production came in 1929 with an average of about 2750 barrels a day. In 1934 the production had dropped to 980 barrels a day. Some wells in this field have been successfully treated with acid.

Soap Creek was discovered in 1921. The oil is black oil of 19° A.P.I. Heavy over-riding royalties, low gravity and inaccessibility to market have all tended to keep the field shut in. The producing horizons are Amsden and Madison limestone which may respond to acid treatment if and when a market can be found.

Under the heading of other fields are included such small fields as Whitlash, Bears Den and Flat Coule, fields in which only one, possibly two, wells have been completed. Lake Basin field, a small producer for a number of years, is also listed in this category.

PROSPECTS FOR FUTURE DEVELOPMENT:

Montana may be divided into three known petroliferous provinces, the Sweetgrass Arch, the Cat Creek-Devils Basin area and the Big Horn Mountains-Pryor Mountains-Hailstone Arch. Many anticlines and domes in these areas have been tested with very disappointing results. In the Sweetgrass Arch area it seems possible that, as more is learned by drilling and by geophysical methods, that some new fields may be found. There seems little hope that large fields will be discovered in the other two areas mentioned, although it is not impossible that small productive areas may be found by intensive search. Deeper drilling in this area may be successful, but so far no production has been obtained below the Kootenai except at Soap Creek.

The Baker-Glendive Anticline in the southeastern part of the state has produced gas for many years. A deep test is planned for this fall and winter and will definitely prove or disprove the possibilities of that area.

It may be possible that geophysical methods may

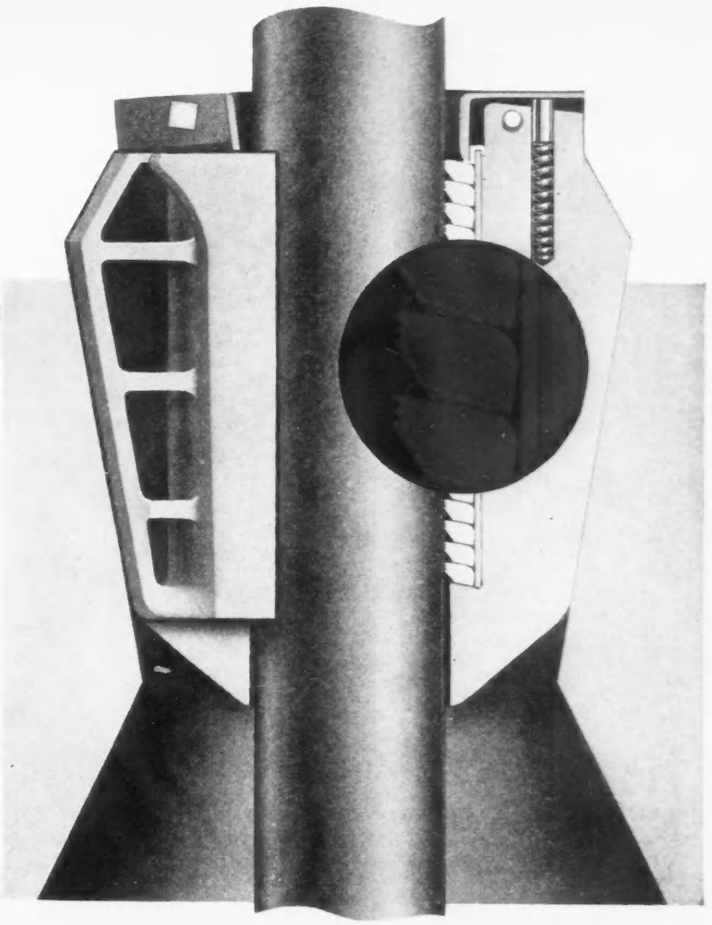

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TABLE 2
Colorado Reserves

FIELD	Light Oil, Barrels	Black Oil Barrels
Florence	477,300	
Fort Collins	100,000	
Greasewood	81,200	
Moffat (Craig)	1,000,000	
Iles	12,000,000	
Rangley	50,000	4,000,000
Tow Creek	364,300	
Walden	6,000,000	
Wellington	581,900	
Other Fields	100,000	
Total	20,754,700	4,000,000
Grand Total	24,754,700	

give some clue to obscure structural features in the central and eastern part of the state.

Viewed as a whole, the experiences in the past do not lead one to expect much in reserve beyond the known reserves of the present fields.

Colorado

PROVED RESERVES:

Colorado produced only a little more than one million barrels of oil last year. The gasoline consumption was equivalent to 1,800,000 barrels of crude oil. The deficiency was supplied largely by the Mid-Continent and Wyoming.

Since the discovery of oil in 1862 at Florence, only 13 oil fields have been discovered.

The reserves for Colorado are listed in Table 2.

Florence field with 9000 productive acres, is the largest field discovered to date. The field has produced 13,207,000 barrels to January 1, 1935. Over 1200 wells have been drilled, but only 105 were produced last year. The remainder are dry holes and abandoned producers. Drilling is relatively shallow, about 2200 feet. Production is from crevices and cracks in the shale.

Fort Collins and Wellington, in the north central part of the state, are companion folds along the same anticline. They were proved productive in 1923 and 1924 and have produced about 6,340,000 barrels to the first of the year. Drilling depth is about 4500 feet. Well density is about one well to 40 acres. Deeper production may be found on this anticline below the Morrison.

Iles Dome in northwestern Colorado was discovered in 1924. Production is found in the upper part of the Nugget sandstone of Jurassic age and constitutes the major reserve in the state at this time. The field is about 600 acres in extent and contained 21 wells at the beginning of 1935. Deeper production may be found here.

Rangely Dome, in the northwest part of the state and not far east of the Utah line, was discovered in 1919. The wells in the field are small and market has been restricted by inaccessibility. A deep well was drilled into the Pennsylvanian Weber formation and after several shots, had an initial of about 200 barrels of black oil. With only this one well completed and no present market, the reserve set up in Table 2 is questionable. It will probably be quite a few years before more is known about the field.

The Walden district is in North Park, in the north central part of the state. Production has been found on both North and South McCallum Anticlines, where two wells produced high gravity oil with large quantities of carbon dioxide gas. There is some doubt as to the identity of the producing horizon and a well is now drilling to try to solve this problem. Here again the reserve is problematical.

PROSPECTS FOR FUTURE DEVELOPMENT:

Deeper drilling in the established pools is regarded as the most probable source of new oil. The eastern part of the state, along the Las Animas Arch, has been the seat of an active leasing campaign by many of the major companies and larger independents. Much geophysical work is being carried on and some drilling is contemplated. It is too early yet to offer more than a general opinion that if production is found in the area it will probably be deep and in beds of Pennsylvanian age or older. Pools of western Kansas type seem most likely, if such are found.

Northwestern New Mexico

PROVED RESERVES:

The lands in the Navajo Indian Reservation and adjacent territory have yielded small fields of exceptionally high gravity oil. The market for a large part of the oil produced in this district is local. The estimated reserves for the area are listed in Table 3.

Hogback Dome, a few miles west of Farmington, was discovered in 1923. The oil is 56° A.P.I., and the field is developed by six wells. Production is from the Dakota sandstone. The field has produced a little over 1,500,000 barrels to January 1, 1935. Deeper production may be found in this field.

Rattlesnake Dome, near Ship Rock, also was discovered in 1923. Production is obtained from the Dakota sandstone and the upper part of the Pennsylvanian. The lower production has been developed by only two wells. In 1934 there were 18 producers in the field. The gravity of the Dakota oil is 64° A.P.I. and that from the Pennsylvanian 38° A.P.I.

Table Mesa, a small field in the same area as Rattlesnake, was first drilled in 1925. It produced 58° A.P.I. oil from six wells last year.

Other fields include Aztec, Bloomfield, Hospah and Stoney Buttes. The production at Aztec and Bloomfield is small and is used locally. Hospah has one well and nearby wells were dry. Stoney Buttes also has only one small producer.

PROSPECTS FOR FUTURE DEVELOPMENT:

In this area of high grade crude, small wells at shallow depths have been very profitable although at times difficulty is had in disposing of the production. Here as elsewhere in the Rocky Mountain district, deeper drilling on proved structures appears to offer the best chance of finding additional reserves. Although the deep Pennsylvanian production on Rattle-

TABLE 3
Crude Oil Reserves in Northwestern New Mexico

FIELD	Light Oil, Barrels
Hogback	495,100
Rattlesnake	3,584,000
Table Mesa	330,000
Other Fields	70,000
Total	4,479,100

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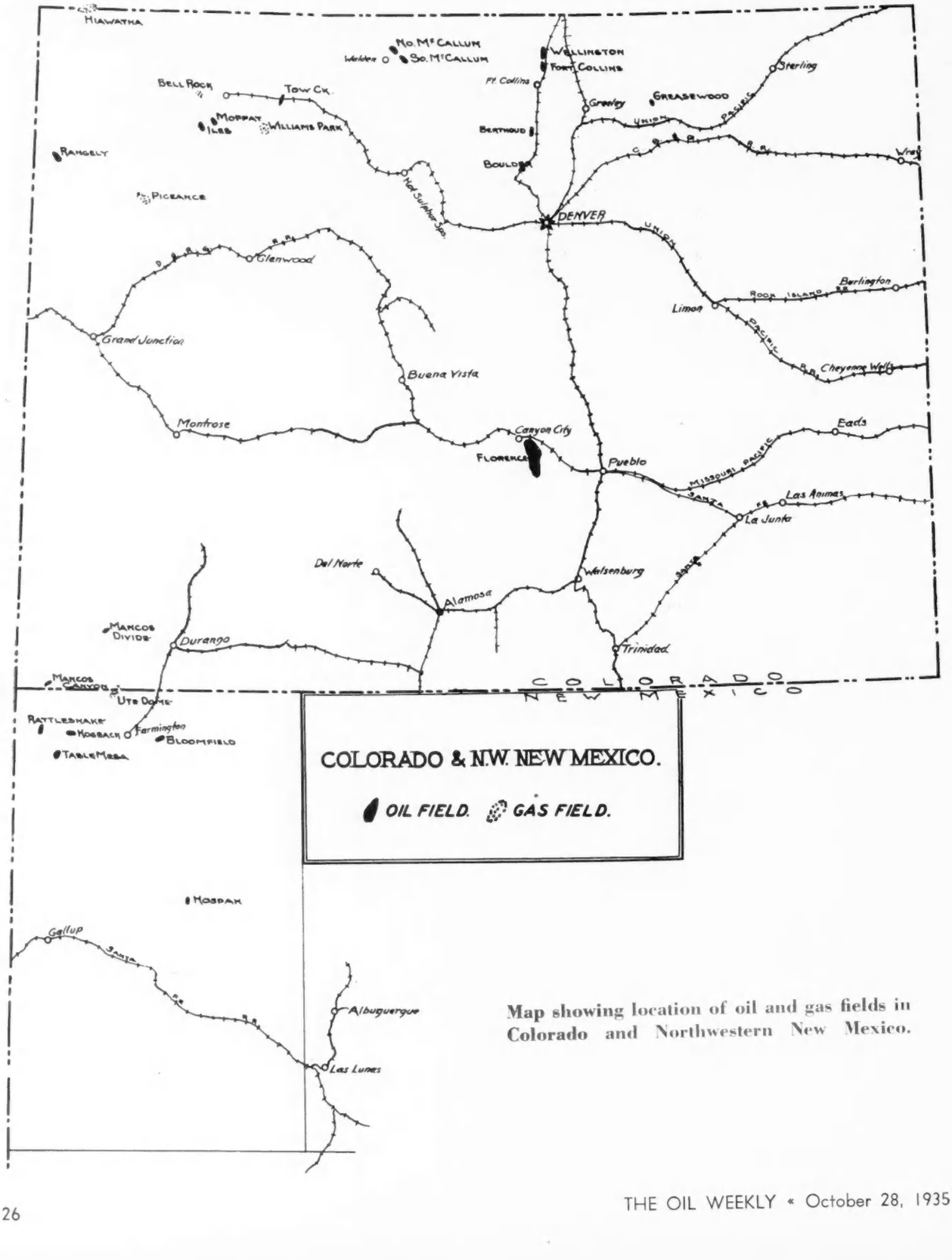
snake has been rather disappointing, deep tests will have to be drilled on the other structures when market conditions warrant them.

Two gas fields, Barker Creek Dome and Ute Dome, companion folds, near and on the Colorado-New Mexico line, yield gas from the Dakota sandstone and are regarded as possible oil producers in the deep horizons.

The second and concluding article of this study will appear in an early issue of THE OIL WEEKLY. Part 2 continues the discussion of the detailed analysis of the crude oil reserve status of the various Rocky Mountain states; Wyoming, northeastern Arizona, Utah and Idaho are considered. The author concludes the series by giving a comparison between previous estimates on reserves and the latest one, which is presented in this series.



Map showing location of oil and gas fields in Colorado and Northwestern New Mexico.

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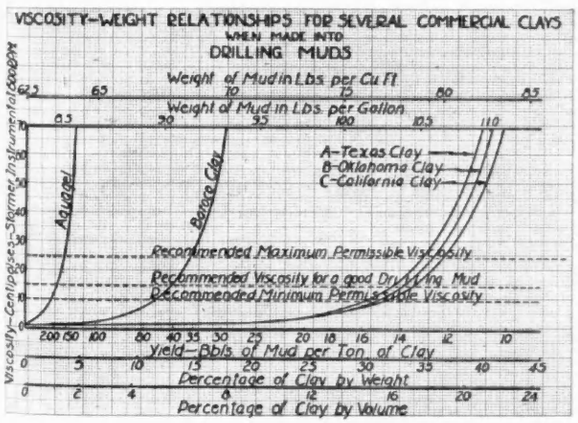
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Percentage of Clay by Volume

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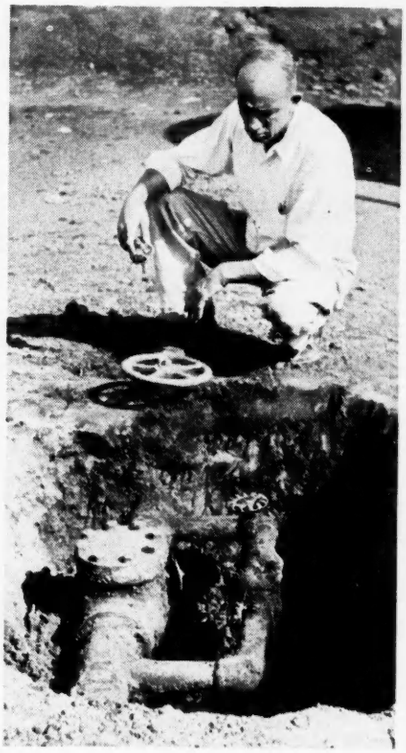
Air-Venting of Gravity Systems

By ELTON STERRETT



Two-inch valve and bypass for bleeding off air.

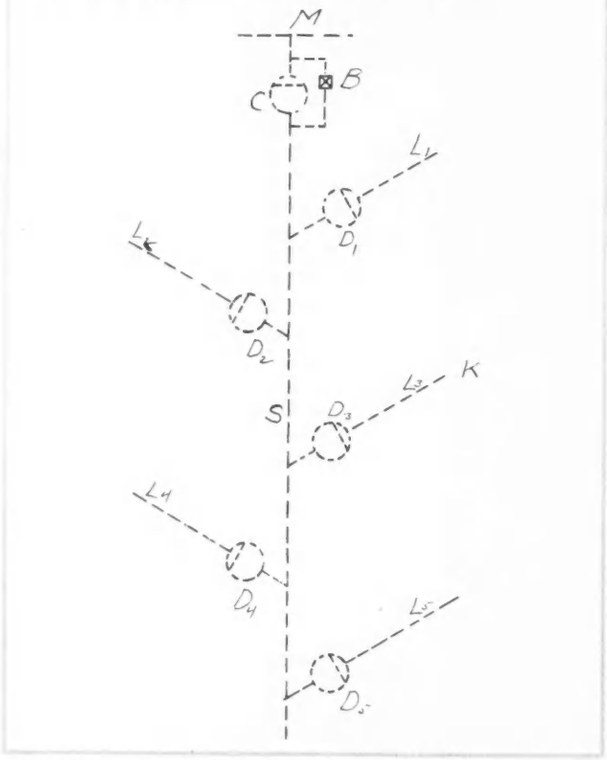
AIR, entering the gravity gathering system when a tank pulls dry, can tie up production as effectively as a broken line, and is often more difficult to control. In many cases, when a heavy slug of air gets into a gathering system, it is days before it can all be worked out and the flow restored to its former smoothness.

One company discontinued its entire gravity system to one portion of the East Texas field, so serious were the delays incurred when the mains became air-bound. Pumps and a pressure system were resorted to in its attempt to get around the trouble. Other companies also have experienced trouble with air in gravity lines and have taken steps to overcome the difficulty.

By working over a system, as diagrammatically shown in the sketch, any air entering the system is cared for by manipulating one valve. The check valves on the various laterals feeding into the system were all moved—or were there installed on new work—as close as possible to the main. With this done, any air entering through a given tank, as at "K" for instance, would be carried to the line "S" and, working its way up the grade of the system, would be prevented by the checks "D_2" and "D_1" from working back into the laterals protected by them.

Air-Vented Gravity System

M—Tank Manifold
C—Air-Control Check
B—Air Bypass
D—Lateral Checks
L—Laterals
S—System Main

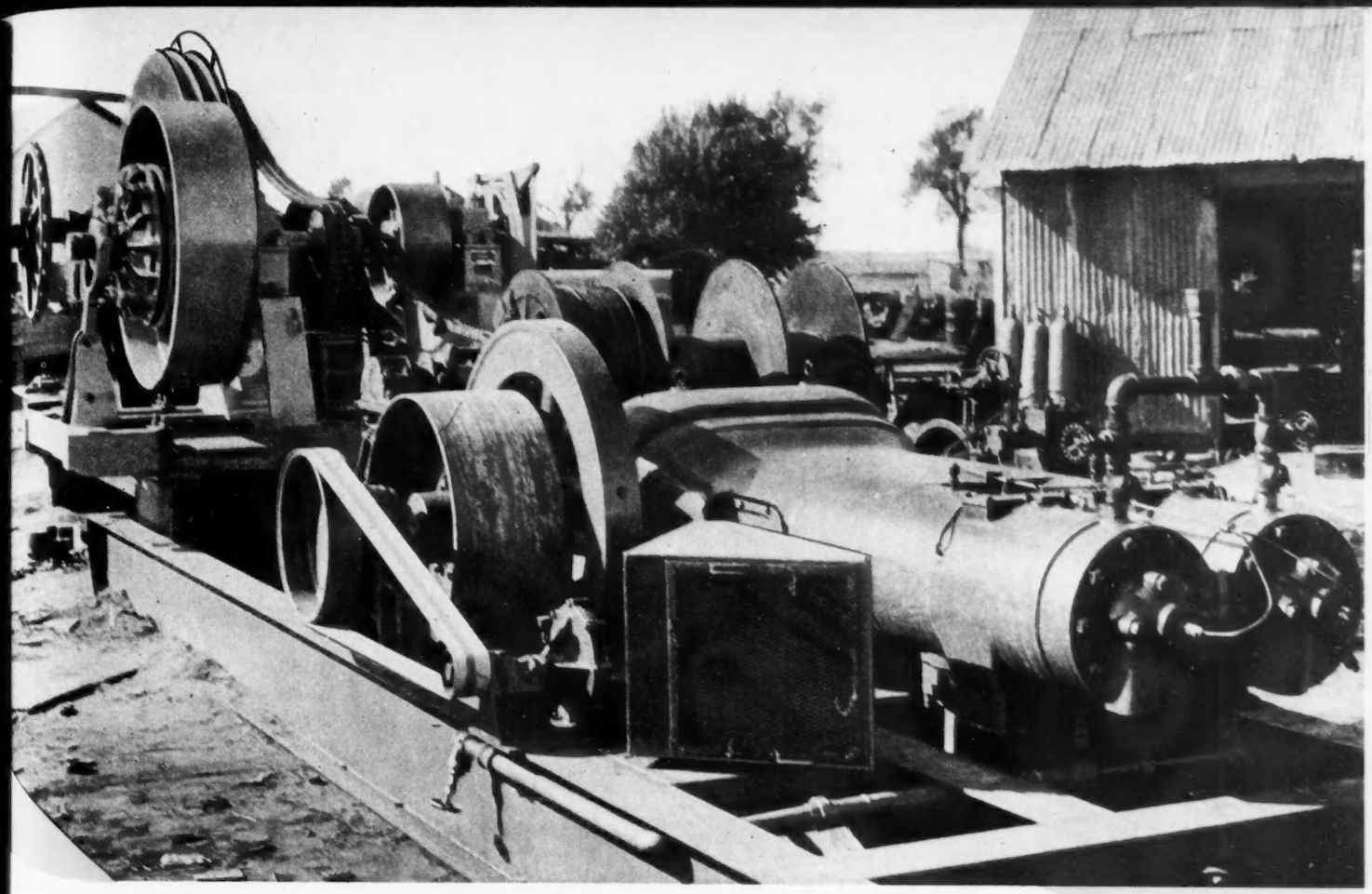


Prevented by the closely ranged checks from entering the higher laterals—higher on the contours of the field served—this entrapped air works back to the master check valve "C", set at the highest point of the system and as close to the manifold "M" or the uppermost tank as possible. This check would operate to trap the entrained air at that point, effectively binding up that portion of the system, were an effective means not provided for its elimination.

As shown at "B" in the sketch and pictured in the photograph, a two-inch bypass line with valve therein is carried, on a dead level, around the check. To remove air at this point, all that is necessary is to open the two-inch valve when the main tank gate is opened, then the trapped air works quickly around through the bypass into the tank, quickly and effectively freeing the line.

Reverting to the sketch, if the tank on lateral "K" is cut off before the air entering through it reaches the system, the air trapped therein above the check valve works up to the tank on that lateral, there to clear itself into the tank when the control valve is next opened to run production from that lease.

In the installation exhumed for the photographer, the typical air-vent bypass shows the horizontal check on the four-inch flow line, with the bypass cutting around it on a level and tying into the line again just ahead of the four-inch gate controlling flow from the tank battery manifold. By selecting a check with flange connection on the inlet side, it is possible to install such a bypass rigidly and with only one union in the set-up, eliminating joints and enabling the device to be standardized for ordering the fewest possible number of nipples and fittings.



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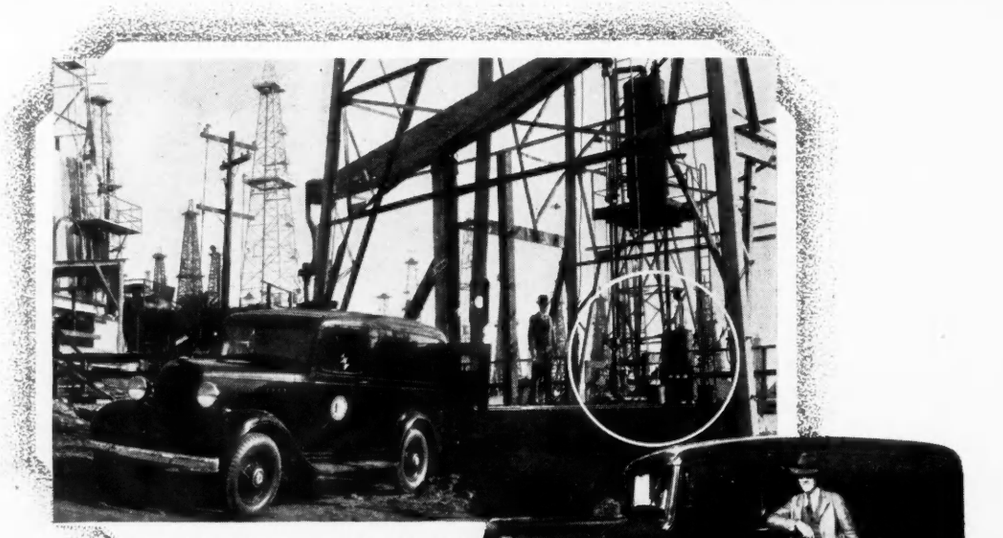

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INSURANCE AGAINST UNNECESSARY LOSSES

Water-Flooding in The Mid-Continent

By GEORGE H. FANCHER, York State Oil Co., Inc., Caney, Kansas, and

KENNETH B. BARNES, Dept. of Petroleum Production, The University of Tulsa, and Geologic Standards Company, Tulsa, Okla.

THIS American Institute of Mining and Metallurgical paper, presented at the Houston Meeting, October 11, 1935, is concerned with a brief presentation of such data as are available to the authors on existing Mid-Continent water-flood operations, a survey of the region and extent to which application of the method seems most likely to be made, an estimation of the crude reserve existing for such operations, suggestions as to the importance of core analysis in guarding against uncontrolled floods and its usefulness in predicting ultimate recoveries, and comment on some of the economic phases involved.

WITH the advent of water-flooding into actual commercial usage in a half dozen areas in the Mid-Continent the process passes the experimental stage and joins other methods and processes now in use which have been found suitable in one oil field or another in securing a more profitable production than has existed heretofore. The use of the air-gas lift, acidization, pressure maintenance, and repressuring each, or in some combination, have presented their problems in economics and engineering during their introduction and extended application. When a new field is discovered or attention is turned to an old producing area in which these methods have not been considered, it is to be expected that these problems again arise. While some information is available as to the results obtained by water-flooding in a few localities in the Mid-Continent, the extrapolation of the sand data on which the results are based, for even generalized use in other areas and fields in the region, is hazardous. It is precarious to assume that the same physical condition will obtain in a sand over more than small, specific areas.

History

Contrary to general opinion, water-flooding is not new to the Mid-Continent. Advantage has been taken of so-called natural floods caused by leaking casing for over 20 years in Chautauqua County, Kansas, and probably in a good many other areas if the truth were known. Evolution naturally lead to a technique involving the slitting of casing opposite water sands in edge wells, estimating the direction and progress of the water so admitted, drilling of new oil wells to keep abreast of the flood and the eventual conversion of these wells to water wells after the flood had passed them. It should be noted that in most cases this practice utilized salt water brines in contra-distinction to similar methods employed in the East. Results by such methods have been highly satisfactory in some cases, despite the crude methods used. Since the intentional admittance of water of any kind to an oil sand has until recently not only been viewed with askance by the industry at large but also has been illegal, neither results nor methods have been discussed openly.

Fortunately the need for secrecy in this respect has passed. Water-flooding is approved by the industry. The legislature of the State of Kansas in the spring of 1935, with the approval of the Governor, legalized the use of water in repressuring and the disposal of waste waters in suitable sub-strata. Likewise the Corporation Commission of the State of Oklahoma has issued permits for water-flooding in suitable circumstances. It seems probable to expect that other states will follow suit in enacting this advanced legislation.

The first systematic flood in the Mid-Continent was started in 1931 in Rogers County, Oklahoma, in the south end of the Alluwe field, in the Bartlesville sand. Development is being continued in this and other parts of the Nowata field at present. Other fields in the Mid-Continent are in Creek County, Oklahoma, in the Red Fork sand, Osage County, Oklahoma, in the Bartlesville sand, Chautauqua County, Kansas, in the Peru sand, and Greenwood County, Kansas, in the Bartlesville sand.

Characteristics of the Process

Before considering the subject of what may and may not be suitable sands, fields and areas in the Mid-Continent for water-flooding, a survey of some

TABLE 1

County	Number of Wells	Average Production Per Well Per Day
Nowata	6,180	0.89
Rogers	1,712	0.50
Washington	3,526	0.67

of the characteristics of the process should be made. The process is used because:

1. It may produce oil that could not be recovered by natural methods of production. Usually this is the case with oil sands which lack a natural water drive. Leases are known that would not have recovered 1000 barrels per acre over a very long period of time, as indicated by production decline curves, but that have obtained 4000 or more barrels per acre under intensive, properly planned water-floods. One cause for this result is that energy, through the water drive, can be applied in sufficient amount and at selected points and to areas to move some of the oil, contained in the sands that lack energy, to the wells. This energy greatly supplements the only important driving force, the gas pressure, heretofore existing for producing the crude oil. The gas pressure in sand of this type, especially if they have produced for some time, is usually so small as to be almost negligible, and consequently wells produce at a small rate as Table 1 will indicate.

It is also well known and has frequently been mentioned in literature that gas bubbles occurring in the capillary net works of oil sands are actually a deterent or obstruction to the movement of the oil to the well. Gas bubbles must be distorted to pass through the re-occurring small openings, and energy must be supplied to perform the distortion. In natural production, gas bubbles further back in the sand and under higher pressure, by their expansion supply the needed energy. As reservoir pressure decreases a stagnant, greatly enlarged system of bubbles develops which resists flow. The supplial of energy through the medium of water affords convenient, and economical means for overcoming the stagnation of the system and for pushing the gas bubbles through the capillary net work. If enough pressure is used some of the gas will return to solution with attendant beneficial changes in the physical properties of the crude. In re-pressuring, the energy for distorting and moving the bubbles is supplied by furnishing more bubbles under a higher pressure, with the energy coming from the expansion involved. The bubble system probably is not diminished in size.

2. Successful water-flooding will recover the dead or unsaturated crude commonly present in stripper fields in a short time. For example, a lease may be considered that is at or approaching its economic limit under present conditions. The lease might be made to produce further by one of three methods with the following results:

(a) Pumping, 25 years, yield: 1500 barrels per acre.
(b) Repressuring, 10 years, yield: 2000 barrels per acre.
(c) Water-flooding, 2 years, yield: 3000 barrels per acre.

Method (a) is obviously impractical, (b) and (c) can be made profitable. The saving in interest, depreciation, maintenance and operating charges, and ad valorem taxes made possible by use of method (c) is evident.

(3) The oil saturation of the sand, if sufficiently high, is reduced to a fairly low figure. This, of course, is only another way of stating that the recovery is efficient. The process is generally thought to remove from 35 to 45 percent of the oil contained in sand of suitable physical properties at the start of flooding. In tight sands it is known that water will remove more oil than will a gas drive, although in loose sands with large capillaries, the gas drive may be considerably better if the original oil saturation is low.

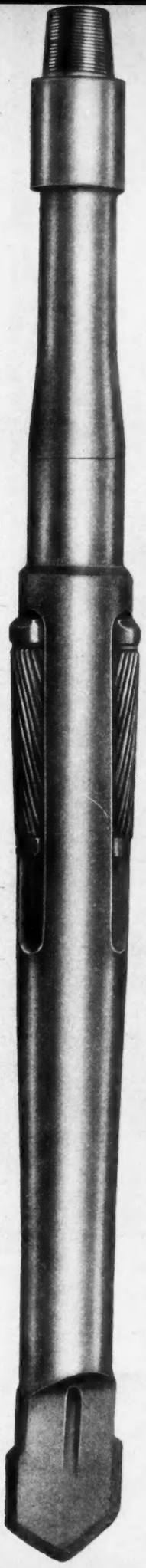
(4) Water-flooding offers a positive control of oil production. While it is not desirable to simply shut down the water to input wells to decrease production, flood projects are developed in blocks the total life of which is comparatively short. By planning to develop new blocks in accordance with prevailing economic circumstances, and in necessity restricting the input of water, a control is possible that is not much more difficult than that for ordinary pumping. In fact, one operator has compared it to turning on and off a spigot.

(5) The maintenance and operation of water-flood leases, after sand studies and development plans are made, is easy and simple. Labor charges to the operation are low. High pressures are obtained more easily and cheaply in water-flooding than by gas repressuring.

(6.) Water-flooding based upon competent core analyses and economic studies becomes simply a mining operation capable of yielding a desirable return upon any given investment.

Regional Extent

Consideration of the areas in the Mid-Continent that might be water-flooded clearly demands the imposition of physical and economic limitations. The first restrictions, obviously, is that only those oil fields lacking or possessing an inadequate water-drive are involved. If only physical limitations are considered possibly a large number of the oil fields in the Mid-Continent could be flooded with some degree of success. The chief requirements would be that the permeability profile of the sand body be uniform and average not more than 200 millidarcys in permeability and that the oil content be great enough and in sufficient percentage saturation to assure sufficient recovery. Both laboratory research and field operation have demonstrated that not only is it impossible to strip sand of all the oil held by it by water-flooding but also that the recovery depends upon the percentage saturation and the permeability. It is believed by the authors that it is impossible to reduce the final saturation of a sand of low permeability (5 md.) below 18 percent; of higher perme-



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- When the hole is enlarged by underreaming, ample clearance is provided for a thick, even-walled body of cement about the casing, assuring a permanently tight water shutoff; the clean formation exposed presents a better bonding surface for the cement; and the portion of the hole below the underreamer cutters provides a "socket" that effectively centralizes the pipe.
- Underreaming to bottom before setting the oil string or liner insures larger production because it cleans encrusted rotary mud from the walls of the hole, exposes a greater area of oil sand and forms a larger reservoir for the accumulation of oil. The clearance provided prevents the perforations of screen pipe from becoming clogged by material scraped from the wall of the hole.

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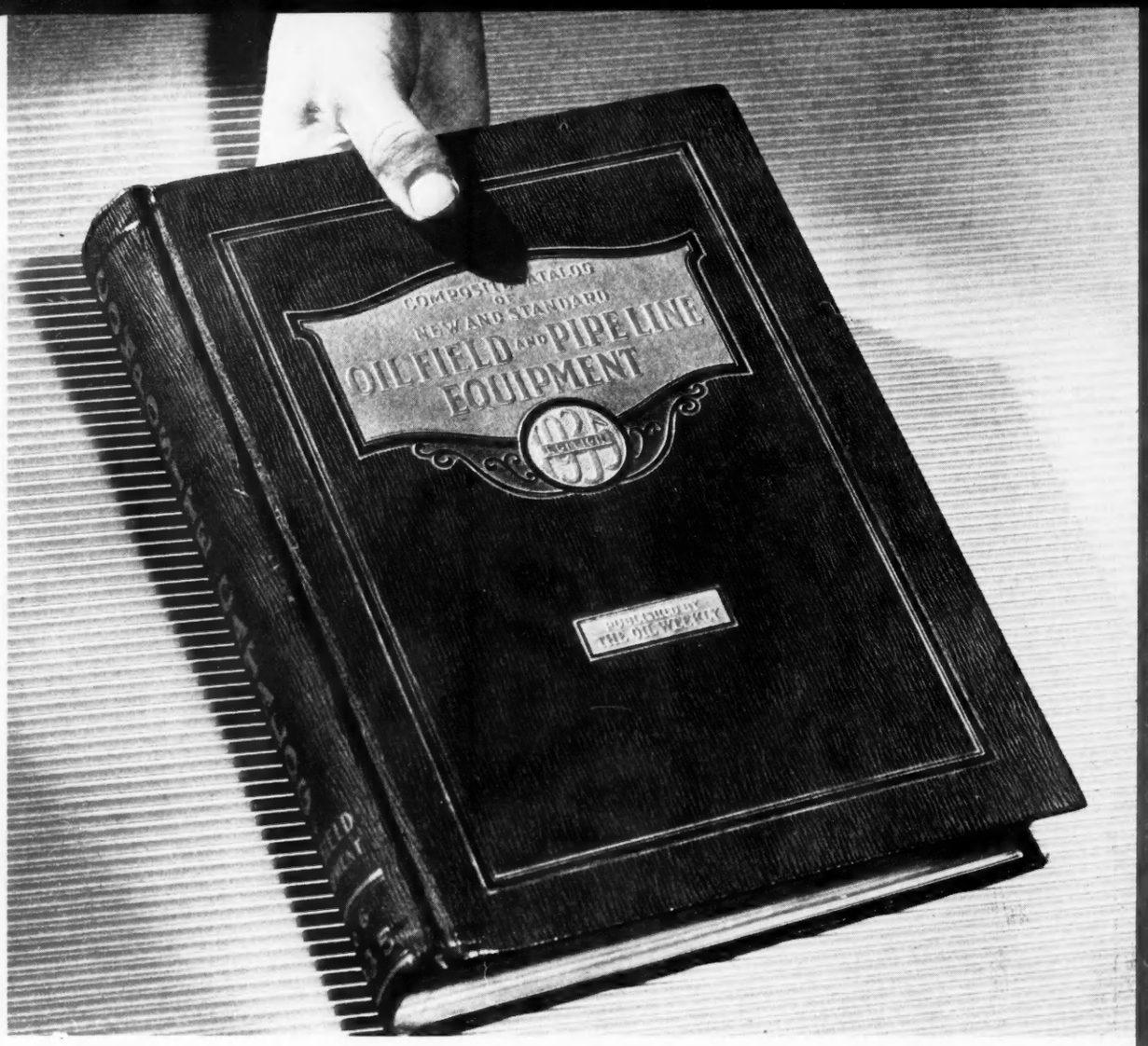

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ability (200 md.) below 15 percent by methods now practicable. Therefore, considering only physical limitations, any sand that has favorable physical properties and a sufficient amount of oil may be flooded.

Data by which to make a general survey of the areas physically waterfloodable in the Mid-Continent are not available until a great many cores shall have been analyzed.

Economic considerations likewise limit the areal extent of territory suited to water-flooding. The Bartlesville sand has the greatest areal extent of any of the productive formations in Eastern Kansas and Northeastern Oklahoma. Bartlesville sand probably contains the largest recoverable reserve as measured by the potentialities of water-flooding. Typical core analyses, presented later in this paper, show the formation in many localities to have physical conditions favorable to water-flooding.

Reserves in Floodable Areas

To arrive at some idea of the oil reserves of this area, the areal extent of the fields as shown on the nomenclature map of the Mid-Continent Oil and Gas Association was approximated by tracing the edges of the productive regions with a planimeter. The results should be conservative since there are many small productive zones not shown on the map. A productive area of 600,000 acres for Eastern Kansas and 800,000 acres for Northeastern Oklahoma was obtained by this method. The various producing sands in these areas were assumed to average a theoretical sand of 15 percent porosity, 35 percent saturated with oil, and 20 feet in thickness, or in other words, a sand containing 8000 barrels of oil per acre. Consequently the oil content of the producing regions under 3000 feet in depth in Eastern Kansas is estimated at 4,800,000,000 barrels and in Northeastern Oklahoma at 6,400,000,000 barrels. This considerable volume of oil remaining in the sands at the present time, properly speaking, is not a reserve. *Only the recoverable portion is a reserve.* If the whole acreage were found to be suitable for water-flooding by criteria discussed in this paper a reasonable recovery and, hence a *reserve,* of 3,000,000,000 barrels should be expected.

Core Analyses

In an appraisal of the possibilities of water-flooding to a particular field and in the development of each project therein, the taking and analysis of cores from the producing sand plays an important role. The cores are analyzed in the laboratory to obtain information concerning the porosity, permeability and oil content of the sand. Reliable methods of analysis for these properties have been established through research and standardization. Many of the larger oil companies in this area maintain well equipped laboratories for this purpose. For the smaller operator as well as those who do not wish to equip a laboratory, reliable commercial laboratories in which this work is a specialty exist. So valuable have core analyses become, not only in water-flooding and appraisal of stripper properties, but also in all production practice, the tendency is to take more cores more carefully than ever before and to have all cores analyzed in a thorough fashion.

Although comparatively few cores have been taken and analyzed from the area under discussion, some results are available in Table 2. Best results have been had in this area with diamond drill cores and the majority of the cores tabulated in the table were of this type. The results are not to be considered as typical of the area until more information proves them to be representative. Indeed, these few data indicate that a considerable variation in the properties of Mid-Continent cores can be expected. Furthermore, it must be remembered that the data in Table 2 are averaged for each core from analytical results on as many individual samples as possible. Properly, the detailed analysis illustrating the variation in porosity, permeability and oil content with depth should be presented together with statagraphic variation such as shale and lime breaks. These data are presented best in graphical form as profiles. Limitations of space forbid such elaboration in this paper. In studying the analytical results for a core the profiles always should be prepared.

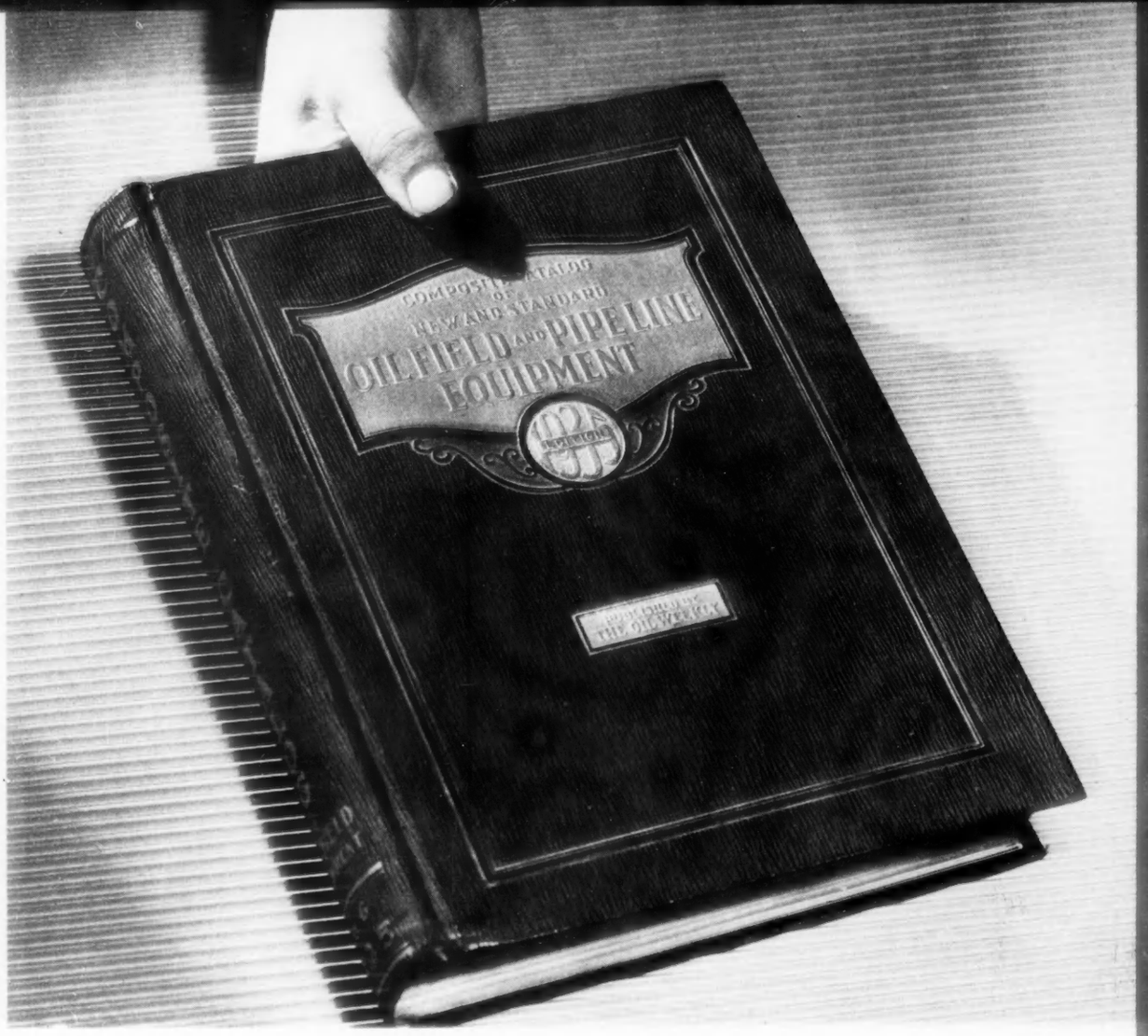
Although few in number, the data in Table 2 are consistent with logic. For example, it is logical that in general oil saturation should vary inversely with permeability and the data so indicate. This relationship would not be expected to hold necessarily at low permeabilities. Assuming that gravity is an indication of the viscosity of crude oil in this area, it would be expected that residual saturation is higher, other things being equal, the lower the gravity (higher vis-

TABLE 2

Analyses of Cores from Mid-Continent Wells

No.	State	County	Sand	Depth Feet *	Thickness Feet	Porosity Percent **	Permeability Millidarcys **	Saturation Percent **	Oil Content Bbls./Acre	Gravity A.P.I.
1	Oklahoma	Rogers	Bartlesville	380	47	14	18	47	24,000	34
2	Oklahoma	Rogers	Bartlesville	364	28	19	12	50	20,000	34
3	Oklahoma	Rogers	Bartlesville	372	40	17	26	36	19,000	34
4	Oklahoma	Rogers	Bartlesville	446	30	10	2	30	7,000	32
5	Oklahoma	Rogers	Bartlesville	392	20	10	1	45	7,000	32
6	Oklahoma	Rogers	Bartlesville	350	34	17	24	44	20 000	34
7	Oklahoma	Nowata	Bartlesville	471	33	18	20	21	9,500	34
8	Oklahoma	Nowata	Bartlesville	480	37	11	8	38	12,000	34
9	Oklahoma	Nowata	Bartlesville	618	25	23	250	65	26,000	36
10	Oklahoma	Nowata	Bartlesville	608	46	20	180	40	27,000	36
11	Oklahoma	Nowata	Bartlesville	607	26	20	170	40	16,800	36
12	Oklahoma	Nowata	Bartlesville	635	23	20	125	46	17,000	35
13	Oklahoma	Nowata	Bartlesville	603	18	21	140	31	9,000	35
14	Oklahoma	Nowata	Bartlesville	608	25	18	175	33	13,500	35
15	Oklahoma	Nowata	Bartlesville	484	38	18	26	29	13,000	..
16	Oklahoma	Nowata	Bartlesville	488	30	17	30	36	13,700	..
17	Oklahoma	Washington	Wayside	494	9	16	20	36	2,300	32
18	Oklahoma	Osage	Bartlesville	1,661	50	26	1,000	20	20,000	..
19	Oklahoma	Osage	Bartlesville	1,711	43	18	100	35	21,000	..
20	Kansas	Montgomery	Wiser	779	45	15	5	10	5,000	30
21	Kansas	Chautauqua	Peru	1,100	25	17	25	24	8,000	30
22	Kansas	Allen	Bartlesville	819	30	20	70	45	21,000	30
23	Kansas	Greenwood	Bartlesville	1,969	63	22	48	15	15,300	42†

*Top of Sand. **Integrated average. †Absolute viscosity @ 70 F. = 4.5 centipoises.



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ability (200 md.) below 15 percent by methods now practicable. Therefore, considering only physical limitations, any sand that has favorable physical properties and a sufficient amount of oil may be flooded.

Data by which to make a general survey of the areas physically waterfloodable in the Mid-Continent are not available until a great many cores shall have been analyzed.

Economic considerations likewise limit the areal extent of territory suited to water-flooding. The Bartlesville sand has the greatest areal extent of any of the productive formations in Eastern Kansas and Northeastern Oklahoma. Bartlesville sand probably contains the largest recoverable reserve as measured by the potentialities of water-flooding. Typical core analyses, presented later in this paper, show the formation in many localities to have physical conditions favorable to water-flooding.

Reserves in Floodable Areas

To arrive at some idea of the oil reserves of this area, the areal extent of the fields as shown on the nomenclature map of the Mid-Continent Oil and Gas Association was approximated by tracing the edges of the productive regions with a planimeter. The results should be conservative since there are many small productive zones not shown on the map. A productive area of 600,000 acres for Eastern Kansas and 800,000 acres for Northeastern Oklahoma was obtained by this method. The various producing sands in these areas were assumed to average a theoretical sand of 15 percent porosity, 35 percent saturated with oil, and 20 feet in thickness, or in other words, a sand containing 8000 barrels of oil per acre. Consequently the oil content of the producing regions under 3000 feet in depth in Eastern Kansas is estimated at 4,800,000,000 barrels and in Northeastern Oklahoma at 6,400,000,000 barrels. This considerable volume of oil remaining in the sands at the present time, properly speaking, is not a reserve. *Only the recoverable portion is a reserve.* If the whole acreage were found to be suitable for water-flooding by criteria discussed in this paper a reasonable recovery and, hence a *reserve*, of 3,000,000,000 barrels should be expected.

Core Analyses

In an appraisal of the possibilities of water-flooding to a particular field and in the development of each project therein, the taking and analysis of cores from the producing sand plays an important role. The cores are analyzed in the laboratory to obtain information concerning the porosity, permeability and oil content of the sand. Reliable methods of analysis for these properties have been established through research and standardization. Many of the larger oil companies in this area maintain well equipped laboratories for this purpose. For the smaller operator as well as those who do not wish to equip a laboratory, reliable commercial laboratories in which this work is a specialty exist. So valuable have core analyses become, not only in water-flooding and appraisal of stripper properties, but also in all production practice, the tendency is to take more cores more carefully than ever before and to have all cores analyzed in a thorough fashion.

Although comparatively few cores have been taken and analyzed from the area under discussion, some results are available in Table 2. Best results have been had in this area with diamond drill cores and the majority of the cores tabulated in the table were of this type. The results are not to be considered as typical of the area until more information proves them to be representative. Indeed, these few data indicate that a considerable variation in the properties of Mid-Continent cores can be expected. Furthermore, it must be remembered that the data in Table 2 are averaged for each core from analytical results on as many individual samples as possible. Properly, the detailed analysis illustrating the variation in porosity, permeability and oil content with depth should be presented together with statagraphic variation such as shale and lime breaks. These data are presented best in graphical form as profiles. Limitations of space forbid such elaboration in this paper. In studying the analytical results for a core the profiles always should be prepared.

Although few in number, the data in Table 2 are consistent with logic. For example, it is logical that in general oil saturation should vary inversely with permeability and the data so indicate. This relationship would not be expected to hold necessarily at low permeabilities. Assuming that gravity is an indication of the viscosity of crude oil in this area, it would be expected that residual saturation is higher, other things being equal, the lower the gravity (higher vis-

TABLE 2

Analyses of Cores from Mid-Continent Wells

No.	State	County	Sand	Depth Feet *	Thickness Feet	Porosity Percent **	Permeability Millidarcys **	Saturation Percent **	Oil Content Bbls./Acre	Gravity A.P.I.
1	Oklahoma	Rogers	Bartlesville	380	47	14	18	47	24,000	34
2	Oklahoma	Rogers	Bartlesville	364	28	19	12	50	20,000	34
3	Oklahoma	Rogers	Bartlesville	372	40	17	26	36	19,000	34
4	Oklahoma	Rogers	Bartlesville	446	30	10	2	30	7,000	32
5	Oklahoma	Rogers	Bartlesville	392	20	10	1	45	7,000	32
6	Oklahoma	Rogers	Bartlesville	350	34	17	24	44	20,000	34
7	Oklahoma	Nowata	Bartlesville	471	33	18	20	21	9,500	34
8	Oklahoma	Nowata	Bartlesville	480	37	11	8	38	12,000	34
9	Oklahoma	Nowata	Bartlesville	618	25	23	250	65	26,000	36
10	Oklahoma	Nowata	Bartlesville	608	46	20	180	40	27,000	36
11	Oklahoma	Nowata	Bartlesville	607	26	20	170	40	16,000	36
12	Oklahoma	Nowata	Bartlesville	635	23	20	125	46	17,000	35
13	Oklahoma	Nowata	Bartlesville	603	18	21	140	31	9,000	35
14	Oklahoma	Nowata	Bartlesville	608	25	18	175	33	13,500	35
15	Oklahoma	Nowata	Bartlesville	484	38	18	26	29	13,000	..
16	Oklahoma	Nowata	Bartlesville	488	30	17	30	36	13,700	..
17	Oklahoma	Washington	Wayside	494	9	16	20	36	2,300	32
18	Oklahoma	Osage	Bartlesville	1,661	50	26	1,000	20	20,000	..
19	Oklahoma	Osage	Bartlesville	1,711	43	18	100	35	21,000	..
20	Kansas	Montgomery	Wiser	779	45	15	5	10	5,000	30
21	Kansas	Chautauqua	Peru	1,100	25	17	35	24	8,000	30
22	Kansas	Allen	Bartlesville	819	30	20	70	45	21,000	30
23	Kansas	Greenwood	Bartlesville	1,969	83	22	48	15	15,300	42†

*Top of Sand. **Integrated average. †Absolute viscosity @ 70 F. = 4.5 centipoises.

TABLE 3

Water-Flooding of Peru Sand

Year	Production Bbls. per Year
1	4,421
2	2,171
3*	2,201
4	5,526
5	8,491
6	16,120
7	24,212
8	40,763

*Casing ripped.

cosity) of the crude. Meager evidence presented in the table confirms this view. Obviously too, there is no simple relation indicated between porosity and permeability.

Cores 12, 13 and 14 typify an interesting situation. These cores are from a lease condemned during the period of initial development and flush production as being non oil-bearing because several widely spaced "dry" holes were drilled thereon. It is evident from the analyses of cores from this property that the wells were only relatively dry because of a deficiency of energy in the sand and not because of a lack of oil. Possibly similar occurrences have been numerous. Surely here is a fruitful field for investigation.

Production Records

The production history of the properties from which these cores were obtained should be considered in drawing conclusions from the data. Unfortunately this is difficult, if not impossible, to obtain in many cases. The properties represented by cores 1—6 inclusive probably have yielded about 3000 barrels of oil per acre over a period of thirty years by natural production, use of vacuum and repressuring with air and gas. A property in this general area, but undoubtedly more prolific, for which complete records are available, has produced 5000 barrels of oil per acre in thirty years by the same methods. The properties represented by cores 9, 10 and 11 have yielded nearly 12,000 barrels of oil per acre in a comparable period of time. The lease from which core 23 was secured has produced 5200 barrels of oil per acre in ten years by simple pumping from the top of the sand. Other things being equal, within one area, a useful criterion as to values is that the greater the past recovery by primary methods of production, the better the chances for success with flooding.

Natural Water-Flooding. As mentioned previously, natural water-flooding has been practiced in Chautauqua County, Kansas, and other localities in the Mid-Continent for many years. Greater success has been experienced with this method in the Peru sand than with others. The methods which have been developed are simple, relatively inexpensive, but slow and uncertain in results compared to controlled flooding of any type. In some cases, it is true, profitable floods result, in others the results are dubious. As no core analyses were taken in using this method, and little control of a flood is possible, luck is a considerable factor in the results. Certainly no forecast of probable results is possible in using this method except for a limited area after considerable experience. In flooding the Peru sand by this method, casing is either pulled completely, or (better practice) is slit, cut or gashed opposite a water sand. The water from the Big Salt Sand above the Peru is a favorite source of supply. Since the legalizing of water-flooding in Kansas, the more progressive operators are putting water in wells from the top of the casing head and, in some instances, even metering it. Oil wells are drilled in advance of the flood. As the flood passes, these in turn, are converted to input wells. Usually the new wells are drilled about 300 feet from the water wells. The result, of course, is a line drive. The effects of such a flood are noticed in from one to seven years from the time the water is added. Occasional oil wells produce as much as 15 barrels per day at the peak for a period of from two to three years but this is exceptional. A five-barrel well is considered a good one. The recovery made by one 100-acre lease in this area, first drilled 35 years ago, is shown in Table 3.

A thicker body of sand on this lease than usual for the area must be taken into account in considering these results. Considerable drilling has been done each year to achieve them. It should be remembered that the decline upon the cessation of drilling on this lease will be as rapid as was the increase.

On another lease of 300 acres in this area a natural flood was started 24 years ago. Seventeen years ago this lease was producing 60 barrels per day; today it is producing 180 barrels per day. Possibly 100 acres remain to be flooded.

Controlled Water-Flooding. The first systematic water-flood in the Mid-Continent was initiated in 1931 in the Alluwe field, Rogers County, Oklahoma, by a major company as an experiment. A five-spot system was used but an attempt was made to use old wells. Experience proved this to be a mistake. The old wells were in poor physical and mechanical condition after 30 years of production. Also, the old logs of the wells, if existent, could not be depended on for information as to the correct depths of the various strata. It happened that there was a thief strata in the sand that caused considerable difficulty. Trouble was experienced with by-passing, channelling, and consequent waste of water, time, and effort. In this shallow territory a new well can be drilled and equipped for so little more than the cost of reconditioning an old one that the obvious advantages of the new well allow no alternative.

The spacing used in this project is 440 feet from like well to like well. An average of from 40 to 50 barrels of water per day at a pressure of 400 pounds per square inch is allowed each input well. The kinematic viscosity of the oil in this area is 13.24 centistokes at 70 F., and 7.88 at 100 F. The usual mechanical equipment for water-flooding is used. Input wells are completed differently than in the East. The wells are cased to the sand, the casing cemented and water put into the casing. Packers and tubing are not used. River water, treated and filtered to remove suspended matter and adjust the pH to proper alkalinity, is used. The daily production of this lease was about six barrels before water-flooding was begun; today it is maintained at

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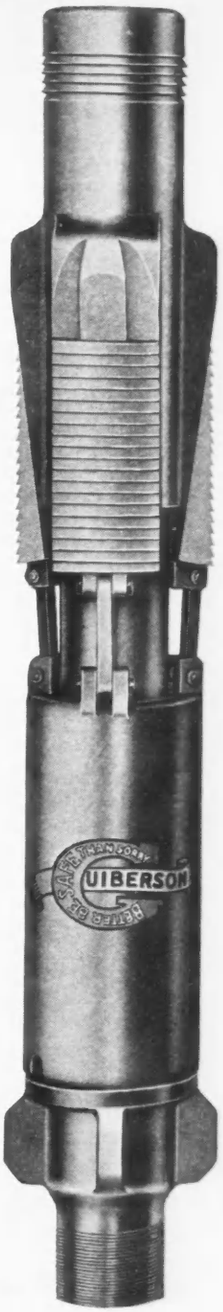

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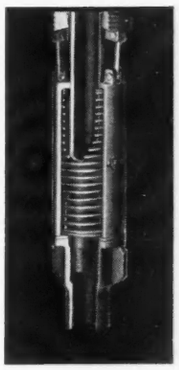

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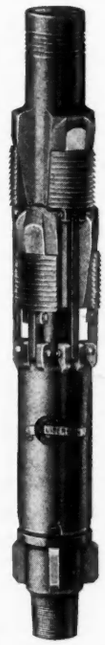

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seventy barrels. The gravity of the crude has been increased two degrees A.P.I. Preliminary results would indicate that a recovery of between three and four thousand barrels per ace can be realized in from five to six years. The experiment has been hampered by the necessity for developing methods suited to Mid-Continent conditions, lack of suitable water supply at the beginning and numerous unexpected difficulties. Consequently the economics are not proven yet for controlled water-flooding anywhere in the Mid-Continent although the physical success is. After methods are perfected, it would appear that development should not cost over $1000 per acre. If this be true it would seem that even under present conditions, water-flooding possesses possibilities.

The project represented by the properties from which cores 7 and 8 were secured has been developed in a similar way except that delayed drilling of oil wells has been practiced. All old wells were plugged and abandoned. Water is obtained from shallow gravel beds, is areated, treated with a coagulent and filtered before being used. A pressure of 450 pounds per square inch is necessary to inject from 35 to 70 barrels of water per day per well, the quantity depending upon the thickness and permeability of the sand. The kinomatic viscosity of the crude oil produced on this lease is 7.0 centistokes at 90 F. The spacing is 440 feet from like well to like well. Preliminary results of flooding on this lease are presented in Table 4.

Water was turned into the well represented by core 23 in May, 1935. This well is surrounded by four old oil wells. The project is purely experimental. The spacing is 660 feet from like well to like well. Due to the depth and permeability of the sand, hydrostatic head alone is utilized to inject the fluid. Water from a surface pond, treated with a coagulent and filtered, is used. The well required in excess of 500 barrels a day at the start and still takes 300 barrels per day. Recently the quantity of gas produced by the adjacent oil wells has increased. The quantity of oil produced by the four adjacent wells had increased two barrels per day four months after the introduction of water. This is a remarkable increase considering the thickness of sand, short time of injection, wide spacing and the fact that only one input well is employed. Undoubtedly the saturation reported in Table 2 for this property is low. From the permeability and depth of the sand, together with the fact that the vertical permeability of the sand is virtually the same as the horizontal and the absence of shale breaks it is reasonable to suppose that considerable of the oil in the sand to be cored had been flushed ahead of the drill. It is being recognized that the problem of securing representative samples from a sand by coring is the most important one remaining to be solved in the field of core analysis.

An experimental project involving the flooding of 80 acres of shallow Bartlesville sand in Nowata County, Oklahoma, is also in progress. The chief feature of this project of interest is that the water to be used is the well known radium water (brine) of the region produced from about a thousand feet below the Bartlesville sand. If the experiment appears to be successful it will lead to the orderly development of at least 5000 acres held by the operating company.

Problems Peculiar to the Mid-Continent

In adapting water-flooding to conditions encountered in the Mid-Continent there are problems which either are not present in the East or require different solutions. There are two general types of problems: physical and economic. The success of water-flooding in this region depends upon their solution.

Physical Problems.—Local sands usually are more permeable and possess a higher porosity. Consequently it is not surprising to discover that oil saturation is lower than in the East in comparable cases, although not so low as to preclude profitable operation. Local sands are quite as if not more uniform in permeability profile as those of the East.

Crude oils are more viscous, higher in surface tension. This indicates more difficulty in removing oil from the sands, and more trouble to be expected with emulsions in water-flooding.

Supplies of good, fresh water are limited. A prolific, continuous supply of water, on or near the property, is required. Both surface and sub-surface water can be considered, with quantity and continuity of supply being prime considerations. From 25,000 to 75,000 barrels of water will be required for one acre over four to five years time. On a 40-acre tract the water requirements could reach 3,000,000 barrels, which would average 1000 barrels per day for the whole property. The water load, smaller during early development, will grow with development of a project. Each new set of water wells completed will require more water during the first period of injection than later.

The quality of the raw water available is not as serious a problem as the quantity. Poor water, of course, will introduce treating costs, and increase handling costs, but the usual chemical treating and filtration methods are not expensive. The best fresh water in this area requires more treatment to suit it to flooding than in the East. If water-flooding comes into general use, salt waters must be used. These are the only waters available in sufficient volume. Much remains to be learned regarding the treatment and economic handling of salt water. It must be treated to remove not only those constituents which

TABLE 4

Water-Flooding of Bartlesville Sand

Month	Production Bbls. per Month
1	275
2	200
3	270
4	260
5	535
6	675
7	1,550
8	*
9	*
10	2,480

*Figures not available.

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TABLE 5

Analyses of Mid-Continent Waters

PARTS PER MILLION

Number	1	2	3	4	5	6	7	8	9
State County Source Type	Kansas Chautauqua Big Salt Brine	Kansas Chautauqua Upper Fresh	Kansas Chautauqua Peru Brine	Kansas Montgomery Surface Fresh	Kansas Montgomery Wieser Brine	Kansas Greenwood Surface Fresh	Kansas Greenwood Bartlesville Brine*	Kansas Greenwood Bartlesville Brine**	Oklahoma Silicious Brine
Ca	1,943	238	7,173	23	8,114	75	3,863	6,270	1,810
Mg	1,206	644	1,843	8	2,861	12	923	1,980	627
Na	15,471	1,360	39,674	33	21,633	14	29,800	50,600	15,090
Fe	.....	.....	.....	0.1	19	0.1	42	23	7
(HCO_3)	305	433	226	79	159	34	28	29	400
(SO_4)	680	4,322	319	32	172	39	89	88	23
(Cl)	30,140	957	78,896	45	55,848	15	20,682	36,040	28,060
(SiC_2)	.....	.....	.....	12	9	.....	13	6	14
Total Solids	49,745	7,954	128,131	232	88,815	189	55,440	95,036	46,010
pH	.....	.....	.....	6.7	6.9	7.2	6.8	6.5	7.3

*Individual Well. **Composite, 12 Wells.

would plug the sand but also render it substantially non-corrosive to pipe. Failing in the latter, corrosion resistant pipe and casing must be used.

The analyses of several local waters (Table 5) illustrate the problems. In addition to the constituents that are listed in Table 5, some of the saline waters which are available in the necessary quantities contain dissolved carbon dioxide or hydrogen sulphide or both. The removal of these gases is essential to economical handling of the waters.

Strata in this area are less firmly consolidated than in the East. Consequently casing must be carried to the producing horizon to prevent caving. Because of this and because of the difficulty of obtaining non-frangible setting points for packers, it is probable that water wells will be equipped with cemented casing rather than with tubing and casing. An advantage of this practice is that it allows entry to the well and sand at any time for cleaning out. The casing is salvagable.

Economic Problems.—Mid-Continent crude sells for much less per barrel than Eastern crude. It is possible that refining methods now coming into use will remove this disadvantage permanently.

Drilling costs more per foot and per well than in the East. Various items such as wages, hours of work, ease of drilling and habit explains this.

Completed wells cost more on a comparable basis due to the extra equipment necessary.

Shooting costs more in the Mid-Continent than in the East for the same sized shot.

In addition to the solution of these problems, the usual factors of acreage, depth of sand, pipe-line connections, topography and similar items affecting costs soluble by usual engineering methods must be considered along with forecasts of the price of crude.

As an aid to the solution of these problems it is suggested that, having ascertained necessary physical data and established costs and the probable price of crude, an economic analysis of the development of a unit of 1000 acres be made. This might be based upon, for example:

Year	Rate of Development (percentage per year)	Rate of Depletion (percentage per year)
1	5 (experimental)	25
2	15	25
3	25	20
4	25	15
5	20	10
6	10	5

Total time for depletion: 11 years.

By varying the inter-related factors, the proper combination affording maximum profit is obtained.

It should be emphasized again that the water-flooding of oil-sands is not fool-proof. A proposed flood should be carefully studied and planned. The systematic water-floods now in progress in the Mid-Continent were initiated only after detailed study of the condition of the sands had been made. This practice should be continued. If not, enthusiasm for a process promising profits will reduce failures resulting in premature condemnation of it.

Promiscuous dumping of water into oil-wells should not be countenanced by regulatory bodies, engineers or executives.

To the casual observer of water-flooding in the East, the procedure and mechanics may appear relatively simple. Coring and core analysis may seem superfluous operations. However, contrary to the belief of many, a flood does not travel a uniform and fractional part of a foot per day in its progress through the sands. The unexpected can occur. In the East, for example, in extending a new line of five spot oil wells on a 400 foot spacing, the operator of a certain project, to his surprise and embarrassment, obtained nice water wells. The flood had passed despite precautions. With Mid-Continent sands of higher average permeability, the danger of a similar occurence is enhanced; valuable reserves can be lost permanently if water is introduced without definite knowledge of the sand conditions.

Despite problems and difficulties, it is believed that a future awaits water-flooding in the Mid-Continent. This future depends on the solution of technical problems. If operations are conducted on a scientific basis and economic scale, the result should be that the interests of conservation will be served and the stripper well region will enjoy a prolonged economic life affording support to hundreds now dependent on the oil industries, values of stripper production will increase, capital will be attracted by dependable return on investments and a definite future to the Mid-Continent area can be planned and controlled. However, the process is no panacea for the economic ills of the region. Neither will it nor can it be relied upon to supply the oil required by the nation in increasing amounts. It cannot prevent inevitable shortage, but its use can be profitable and is essential from the standpoints of conservation and economics.

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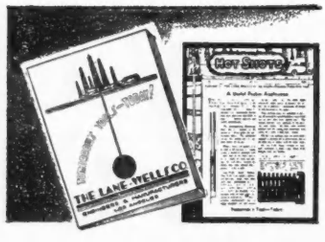

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The heavy buying of late September and early October is strikingly revealed by the empty storage tanks of most East Texas, North Texas and Southern Oklahoma refiners. The bulk of the gasoline sold to a large integrated company was moved in coastwise shipment to Atlantic coastal terminals.

Inability of resellers to break down the prevailing market quotations for gasoline has proved the wisdom of the policy some refiners have adopted of keeping storage to the lowest degree.

The strength displayed by the California market has had a psychological effect on the Mid-Continent situation, and as a result one finds not the slightest tinge of pessimism among refiners or dealers.

The fuel oil market is somewhat sluggish due to railroads complaining of full tanks. Distillate is firm. Natural gasoline is holding and manufacturers are striving to maintain the four cent price they have set for Oklahoma against 3½ to 3¾ for North Texas.

Refinery prices in the Mid-Continent area late last week, basis Group 3, Oklahoma, excluding the one cent federal tax appeared approximately as follows:

Refinery Gasoline: Third grade, 62 Octane or under, U. S. Motor 4¾ to 5; middle grade, 63 to 70 Octane, 5⅝ to 5⅞, and premium grade, 71 and up Octane, 5¾ to 5⅞ cents.

Natural Gasoline: The 26-70 grade was quoted at 4 to 4¼ cents per gallon.

Kerosenes: The 41/43 gravity, water white, doctor treated, 3⅜ to 3⅝ cents and 42/44 gravity, water white, was 3⅝ to 3¾ cents.

Distillates: The 38/40 gravity, rime white distillate, zero cold test, was priced at 3⅛ to 3⅜ cents; 38/40, straw distillate, 3 to 3¼ cents.

Gas Oils: Light straw, zero, good odor, under 190 flash, suitable for domestic burners and testing 32/36 was priced at 3 to 3¼ cents, with 32-36 dark industrial gas oil at 2¾ to 2⅞ cents.

Fuel Oil: Fuels ranged from 60c to $1.10 a barrel, according to gravity.

HIGH OIL DEMAND

Well connections being sought in East Texas

DEMAND for legally produced crude in the East Texas field has reached the most competitive stage developed since the area became a general market factor. Pipe line connection solicitors are armed with liberal expense accounts to resort to the entertainment route in booking new wells scheduled by independents, as well as to divert deliveries from other purchasing agencies. However, the majors are generally adhering to an unwritten code in not molesting each others' out-

side crude supplies for fear of retaliation.

Numerous local gathering systems operated by independents are receiving from four to 7½ cents per barrel for crude delivered into the lines of the large buyers. A five-cent tariff is more prevalent, and several majors have a standing offer to contract for substantial quantities of crude on this basis for one year and less.

Practice among purchasers to place drilling contracts with independents controlling crude sales from one or more properties in the field has prevailed for some months. Owners of local refineries marketing finished products under the approval of the Federal tender board have been among the strongest contenders for additional crude supplies for a long period. This class of crude purchaser generally advances cash for the drilling of additional wells at a nominal rate of interest, or without interest, in return for well connections.

East Texas Tank Car Shipments

Week Ending October 20, 1935

PRODUCTS	No. Cars	Estimated Gallons
Gasoline	413	3,359,710
Fuel Oil	273	2,609,097
Casinghead Gasoline	225	1,942,912
Distillate	67	555,252
Residuum	24	194,356
Gas Oil	22	182,391
Topped Crude	16	150,063
Kerosene	12	95,316
Crude Oil	10	91,336
Naphtha	6	48,715
Total	1,068	9,229,148
Total Previous Week	1,315	11,199,133
Intrastate	395	.....
Coastwise	338	.....
Interstate	335	.....
Total	1,068	.....

CONTROL IS BETTER

Hot oil plants troubled by several influences

EAST TEXAS refiners engaged in processing oil products of a questionable source were fighting a losing battle the past week in trying to survive. Slump in the market price for finished products restricted to Texas distribution exerted economic pressure, while state and federal tender boards have tightened up on approving tender applications that are not strictly in accordance with regulations. The reorganized federal board has materially curbed shipments of refined oil products to more attractive interstate markets. The number of operating plants declined to 20 the past week, as compared to 27 one week previous.

Gasoline qualifying for federal tenders is in demand at 4⅝ cents per gallon, with majors offering to absorb the bulk of the supply, while the same specification motor fuel that cannot pass muster before the federal board has sagged to three cents per gallon on tank truck sales for Texas markets because of surplus stocks. Most of the plant owners that are forced to sell locally are processing confiscated oil along with their other supplies, and are no longer earning attractive profits because of the depressed condition of the intrastate markets.

Tank car shipments of petroleum products from the East Texas field are now at the lowest level attained since last May when the state instituted its hot oil confiscation policy. During the week ending October 20 car loadings dropped to 1068, or 247 cars less than the number shipped the previous week, thus substantiating reports that a sharp cut has been made in the volume of illegally produced crude reaching local refineries. Gasoline shipments via rail the past week were estimated at 3,359,710 gallons, or more than 1,000,000 below the total for the previous week. However, fuel oil movement gained somewhat, with deliveries confined to intrastate traffic, but heavy declines took place in car loadings of crude and toppped crude. The latter two products were also restricted to Texas points due to inability to qualify for federal tenders.

334 TEXAS PERMITS

Austin.—Permits for the drilling of 334 new wells in Texas were approved by the Texas Railroad Commission last week, an increase of nearly 50 percent of the number allowed the week before.

Approval of 126 permits for wells in East Texas accounted for most of the rise. There were 62 in Rusk County, 44 in Gregg County, 13 in Smith County, and seven in Upshur County.

North Texas showed a marked advance with 71 new locations reported. This included 18 in Wichita County, 13 in Archer County, and 15 in Baylor County. In East Central Texas 19 new locations were leased, of which 15 were in Cooke County.

The Gulf Coast report showed an advance with 43 new locations which included 14 for Harris County. In Southwest Texas there was 29 permits, 10 of which were in Duval County.

West Texas reported 23 new permits, and there were eight in the Panhandle. West Central Texas reported 15.

POLAND

Henri Groka, petroleum engineer with Karpacki Instytut Geologiczno Naftowy writes THE OIL WEEKLY that Stateland 28, outpost well directly south of the old Tustanowice oil field in Poland has been completed for an initial production of 10 tons per day.

New fields and extensions, no matter how small, are very important to Poland at this time, as she has been rather desperately attempting to stem the downward trend of her production curve which has remained unbroken for several years.

Summary of Wells Completed in the United States
Week Ending October 19, 1935

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions 1935	Total Completions this date 1934
Alabama	...	...	...	...	.....	4	3
Arkansas	...	...	...	...	.....	108	69
California	28	24	2	2	15,825	701	328
Colorado	...	...	...	...	.....	9	20
Illinois	...	...	...	...	.....	9	14
Indiana	...	...	...	...	.....	170	130
Kansas	31	21	2	8	34,300	1,131	743
Kentucky	7	6	...	1	113	144	201
Louisiana	12	8	...	4	4,520	579	627
Michigan	...	...	...	...	.....	439	384
Mississippi	...	...	...	...	.....	18	32
Montana	5	3	1	1	365	134	159
New Mexico	5	5	...	...	19,330	227	92
New York	...	...	...	...	.....	...	4
Ohio	26	7	11	8	78	1,177	846
Oklahoma	57	36	3	18	39,825	1,932	1,500
Pennsylvania	4	1	3	...	4	105	255
Texas	216	156	4	56	332,445	9,532	7,849
Utah	...	...	...	...	.....	1	3
West Virginia	16	2	11	3	43	393	324
Wyoming	1	1	...	...	2,040	59	38
Total this week	408	270	37	101	448,888	16,893	13,727
Total last week	348	218	46	84	335,540	...	...
Total this year	16,893	11,099	1,406	4,389	31,889,551	...	...

Comparison of Permits Granted for New Wells

STATE	Week Ending Oct. 19	Total this Mo.	Total this Year	Total this Date Last Year	1934 Year Total
Arkansas	..	3	48	63	100
California	17	59	762	464	629
Louisiana	15	45	680	683	799
Kansas	16	61	937	782	1,015
Michigan	24	64	581	378	460
Oklahoma	48	147	1,822	1,622	2,045
Texas	334	685	9,038	8,435	10,550
Total	454	1,064	13,898	12,427	15,598

PRODUCTION UP

California and Louisiana cause output to increase

CRUDE oil production in the United States for the week ending October 26 was a little over the production of the previous week, mostly as a result of gains recorded on the Pacific Coast and in Louisiana. The daily average of 2,788,625 barrels was 234,425 barrels over the market demand as estimated by the Bureau of Mines for the current month.

Oklahoma again followed the normal trend in falling below the daily average of the previous week as the month advanced and proration quotas were approached. Only the Oklahoma City field showed a larger average than in the previous week and the daily output of 499,875 barrels for the state as a whole was 5375 barrels under the previous week and only 6975 barrels over the indicated market demand for October.

Production in Kansas was slightly higher, the 150,950 barrels per day being 1750 barrels over the output of the previous week and 4850 barrels over the market demand estimated for the current month.

In Texas the daily average was little changed from the production of the previous week, the most noticeable changes being in the Panhandle and Gulf Coast areas. The daily average of 1,021,750 barrels was 600 barrels under the output of the previous week and 3750 barrels under the indicated market demand as estimated for October by the Bureau of Mines. Hot oil production was further restricted to an estimated output of 35,000 barrels per day.

A general increase in nearly all producing areas in California boosted the daily average production to 656,500 barrels for the week just passed. Dominguez and Seal Beach were the only areas recording a lower output than in the previous week. This resulted in a gain of 14,500 barrels over the daily average for the previous week and exceeds the recommendations of the fact finding committee of the Emergency Board of Independent California Producers by some 65,800 barrels.

Production gains in both the Northern and Gulf Coast areas of Louisiana raised the daily average for that state to 154,675 barrels, an increase of 2900 barrels over the output of the previous week and 29,575 barrels over the market demand indicated for October.

As for the other producing sections of the country, the Eastern States and the Rocky Mountain States showed slight increases while Michigan remained the same for the first time in several weeks.

CANADIAN STATISTICS

Crude petroleum production in Canada during August amounted to 117,652 barrels as compared with 118,812 barrels in the preceding month, according to a report just issued by the Dominion Bureau of Statistics at Ottawa. In July, 1934, the production was recorded at 115,911 barrels. Output during the first eight months of 1935 totalled 950,805 barrels; in the

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	BARRELS DAILY FOR WEEK ENDING October 26	October 19
TEXAS—		
Texas Panhandle	55,000	53,000
North Texas	59,200	59,300
West Central Texas	25,450	25,400
West Texas	155,150	155,000
East Central Texas	44,450	44,200
*East Texas Field	428,000	427,350
†South Texas	60,700	61,200
†Texas Gulf Coast	193,800	196,900
*Total Texas	1,021,750	1,022,350
OKLAHOMA—		
Oklahoma City	136,150	134,150
Seminole Area	124,850	130,125
Tatums	4,400	4,450
Lucien	9,850	9,900
Fitts	30,225	31,650
Edmond	7,525	8,075
Others	186,875	186,900
Total Oklahoma	499,875	505,250
KANSAS—		
Ritz-Canton	8,000	8,675
Voshell	4,325	4,450
Nikkel-Hollow	6,100	6,000
Sedgwick	6,900	6,850
Oxford	8,550	8,500
Burrton-Haury	15,775	16,125
Lorraine	9,725	7,800
Others	91,575	90,800
Total Kansas	150,950	149,200
LOUISIANA—		
North Louisiana	31,725	29,625
Louisiana Gulf Coast	122,950	122,150
Total Louisiana	154,675	151,775
ARKANSAS	29,925	29,850
CALIFORNIA—		
Long Beach	77,500	76,000
Santa Fe Springs	55,000	54,500
Huntington Beach	44,500	43,000
Dominguez	20,500	21,000
Inglewood	12,000	14,000
Ventura Avenue	36,500	33,000
Seal Beach	6,000	7,000
Midway-Sunset	60,000	58,500
Elwood	14,000	12,000
Kettleman Hills	102,000	99,000
Mountain View	38,000	36,000
Playa del Rey	17,500	17,500
Others	173,000	170,500
Total California	656,500	642,000
MOUNTAIN STATES—		
Wyoming	39,700	39,450
Montana	13,600	13,000
Colorado	4,300	4,250
Total Rocky Mountain States	57,600	56,700
NEW MEXICO	56,600	56,500
EASTERN STATES	106,000	105,400
MICHIGAN	54,750	54,750
*Total United States	2,788,625	2,773,775
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	35,000	37,000
Grand Total, including surreptitious production	2,823,625	2,810,775

† Coastal District of South Texas is included with Texas Gulf Coast.

Crude Runs to Stills; Finished and Unfinished Gasoline; Gas and Fuel Oil Stocks; and Cracked Gasoline Production, Week Ended October 19, 1935

(Figures in thousands of barrels of 42 gallons each)

DISTRICT	Daily Refining Capacity of Plants			Crude Runs to Stills		Stocks of Finished Gasoline			(*) Stocks of Unfinished Gasoline	(†) Stocks of Other Motor Fuel	Stocks of Gas and Fuel Oil	Daily Charging Capacity of Cracking Units			Cracked Gasoline Production
	Potential Rate	Reporting		Daily Average	% Operated	At Refineries	Bulk Term., in Trans. & Pipe Lines	Total at Refys. Term. etc.				Potential Rate	Reporting		Daily Average
		Total	%										Total	%	
East Coast	612	612	100.0	423	69.1	4,360	8,411	12,771	771	215	12,647	534	534	100.0	98
Appalachian	154	146	94.8	118	80.0	1,060	685	1,745	243	85	935	79	78	98.7	26
Ind., Ill., Ky	442	424	95.9	384	90.6	4,007	3,393	7,400	516	45	4,237	349	348	99.7	123
Okla., Kans., Mo	453	384	84.8	281	73.2	2,484	1,720	4,204	421	750	5,027	256	228	89.1	71
Inland Texas	330	160	48.5	87	54.4	933	50	983	202	1,735	1,507	148	105	70.9	23
Texas Gulf	617	595	96.4	571	96.0	4,503	220	4,723	1,499	135	11,975	399	393	98.5	125
Louisiana Gulf	169	163	96.4	140	85.9	670	366	1,036	300	.....	4,587	77	74	96.1	27
North La.,—Ark	80	72	90.0	42	58.3	183	116	299	53	175	480	46	44	95.7	8
Rocky Mountain	97	60	61.9	45	75.0	546	.....	546	123	110	789	46	39	84.8	10
California	852	789	92.6	461	58.4	5,837	2,255	8,092	945	2,040	65,734	280	280	100.0	62
TOTALS WEEK: October 19, 1935	3,806	3,405	89.5	2,552	74.9	24,583	17,216	41,799	5,073	5,290	107,918	2,214	2,123	95.9	573
October 12, 1935	3,806	3,405	89.5	2,558	75.1	24,427	17,510	41,937	5,256	5,435	107,999	2,214	2,123	95.9	559

Below are set out estimates of Crude Runs and Cracked Gasoline Production on B. of M. Basis for Week October 19, 1935 compared with October 1934 Bureau figures.

Estimate B. of M. Basis, October 19, 1935	2,725		610
Estimate B. of M. Basis, October 12, 1935	2,735		595
U. S. B. of M., October, 1934: Daily Average Crude Runs	2,432	U. S. B. of M., October 1934: Daily Average Cracked Prod.	517

(*)Amount of Unfinished Gasoline contained in Naphtha Distillates
(†)Estimated. Includes Unblended Natural Gasoline at refineries and plants; also Blended Motor Fuel at plants

corresponding period of 1934 the production was 955,506 barrels.

Alberta produced 102,741 barrels in August; this production consisted of 97,706 barrels of crude naphtha and 1530 barrels of light crude oil from the Turner Valley field, 1794 barrels of light crude oil from the Red Coulee field and 1711 barrels of heavy crude oil from the Wainwright field.

Natural gas production in Canada in August was recorded at 928,263 thousand cubic feet, as against 908,370 thousand cubic feet in July and 952,386 thousand cubic feet in August, 1934. During the eight months ending August the Canadian output of natural gas totalled 14,526,568 thousand cubic feet or a decline of eight percent from the production in the corresponding period of 1934.

Production of Petroleum in Canada By Months, 1934-1935

Month—	1935 (a) Barrels	1934 Barrels
January	124,654	124,364
February	111,545	116,523
March	120,537	130,007
April	113,685	118,859
May	123,801	117,660
June	120,119	110,115
July	118,812	122,067
August	117,652	115,911
September		115,011
October		122,023
November		113,196
December		117,133
Total—Calendar Year		1,422,869
Total—Eight Months ending August	950,805	955,506

(a) Subject to revision.

WELDING CONVENTION

Cleveland, Ohio.—The 36th Annual Convention of the International Acetylene Association will be held at Hotel Cleveland, in Cleveland, Ohio, on November 12, 13, 14, 15, 1935. The program provided for the meeting suggests many avenues for exploration among the technical questions of the industry, and likewise presents the latest information on a number of improvements. There are a number of papers that will be of interest to oil men in particular. Last year the convention was held in Pittsburgh with over 3500 attending.

As an additional attraction, a Welding and Cutting Forum is being arranged, in which numerous demonstrations will be made and nationally prominent speakers will participate. The forum has been developed by selecting those questions that have been most often asked of the Association's Technical Committees, and of the engineering representatives of the Association's members.

OIL ORIGIN TREATISE

A new view or theory on the question of the origin of oil has been put forth in a copyrighted treatise by J. N. Swanson of Sayre, Oklahoma. He boldly sets out his viewpoint as to the origin of crude oil, and carries his arguments on down the line of its evolution into a final hard coal formation. Mr. Swanson believes that some geologists are weakening on the theory that the billions of barrels of crude in the United States had its origin in engulfed animal matter, such as fish, oysters and roaming mammals back in prehistoric ages. He says this theory is overbalanced in view of the fact that we no doubt will continue to produce gas and oil for a few more generations, possibly never to become entirely exhausted. Further, he states, in view of the fact that it is now possible to extract from coal all the by-products obtainable from crude oil—even to produce the crude itself—is puzzling as to how it will be possible to continue to uphold the claim that coal is the final outcome of embedded vegetation, plants and trees.

Mr. Swanson invites friendly correspondence concerning his theory. Copies of his treatise may be obtained from the author for 35 cents per copy.

Austin.—Gus B. Pierce, Kilgore refiner, was sentenced last week to three days in jail and $300 fine by Judge W. F. Robertson, 126th District Court.

The sentence was assessed for contempt of court, growing out of violation of an injunction.

An order from the court had forbidden Pierce from denying railroad commission employees the right to come on his refinery property and inspect the books and records of the plant.

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to October 25, 1935)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$ .84	2¢	40—$1.08	9-29-33
N. and N.-C. Texas	28— .79	2¢	40— 1.03	9-29-33
Texas Panhandle				
Gray County	34— .79	2¢	40— .91	9-29-33
Carson-Hutchinson	34— .69	2¢	40— .81	9-29-33
West Texas				
Ector, Pecos, W'kler	*.75			9-29-33
Crane, Upton, Howard and Glasscock	*.70			9-29-33
East Texas	*1.00			9-29-33
Texas Gulf Coast				
Anahuac-Dickinson	30— .94	2¢	40— 1.14	8-20-35
Conroe	35— 1.09	2¢	40— 1.19	9-29-33
Tomball	*1.15			9-29-33
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge	Below 20— .82	2¢	34— 1.12	9-29-33
South and S. W. Texas	Below			
Refugio (Light)	20— .82	2¢	34— 1.12	9-29-33
Refugio (Heavy)	*.80			6-29-35
Saxet	*.80			6-29-35
Mirando	*.75			6-29-35
Pettus	*1.05			9-29-33
Salt Flat	*.87			9-29-33
Darst Creek	*.87			9-29-33
Port Lavaca	*.97			
Arkansas				
El Dorado (Light) and Rainbow	29— .79	2¢	40— 1.03	3-17-34
El Dorado East Field and Smackover	*.70			9-29-33

* All gravities—flat rate.
† Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
North Louisiana	29— .79	2¢	40— 1.08	9-29-33
Urania	*.85-*.87			1- 1-34
South Louisiana	Below			
Lockport	20— .80	2¢	34— 1.10	9-29-33
Iowa, Cameron Mds.	Below 20— .70	2¢	34— 1.00	9-29-33
Rocky Mountain States				
Salt Creek	29— .84	2¢	40— 1.08	9-29-33
Elk Basin	*1.17			9-29-33
Grass Creek (Light)	*1.17			9-29-33
Big Muddy	*1.01			9-29-33
Rock Creek	*1.02			9-29-33
Sunburst	*1.20			7-19-35
Lance Creek	*1.02			8-25-33
Osage	*.62			8-25-33
Cat Creek	*1.07			8-25-33
Cut Bank	*1.45			9-29-33
Pondera	*1.05			9-29-33
Hog Back, N. M	*1.00			9- 8-33
Lea County, N. M	*.75			9-29-33
Mid-West States				
Lima	*1.15			2- 1-35
Illinois	*1.13			1- 5-34
Princeton	*1.13			1- 5-34
Western Kentucky	*1.13			5-22-35
Pennsylvania				
Bradford	*2.00			9- 6-35
Sw. Pa. Pipe Line	*1.72			9- 6-35
Eureka Pipe Line	*1.67			9- 6-35
Buckeye Pipe Line	*1.52			7-16-35
Corning Grade	*1.32			10- 2-33
Michigan				
Central Michigan	*1.20			9-30-33
Muskegon	*.70-1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

* All gravities—flat rate.

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
March 5, 1933	.....	.....	Cut 24
May 2, 1933	.....	Cut 19	.....
May 9, 1933	Cut 20	.....	.....
May 22, 1933	Up 10	.....	.....
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
August 11, 1933	Up 10	.....	.....
August 24, 1933	.....	Up 10	.....
August 30, 1933	Up 15	.....	.....
September 6, 1933	Up 10	Up 10	Up 15
September 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25	.....	.....
January 4, 1935	Up 15	.....	.....
February 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
August 29, 1935	.....	.....	Revised
September 6, 1935	Up .05	.....	.....

CRUDE PRODUCTION TAXES

Oklahoma—Five percent of grass value less royalty interest.

Texas—Two cents or 2 percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Two percent of gross value at well and 3/8 of 1c per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

* All gravities—flat rate.

CALIFORNIA

(All gravities above those quoted take lowest price offered in that field)
Effective August 29, 1935

Gravity	Signal Hill	Seal Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey[1]	Olinda-Brea Canyon	Athens Rosecrans Dominguez	Elwood Terrace[2]	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Mountain View	Midway Sunset Elk Hills Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	....	....	$.65	$.65	$.65	$.65	$.65	....	$.57	$.57	$.57	$.57	$.57	$.57
15-15.9	.65	.65	.63	.63	.61	.63	....	....	.63	.63	.63	.63	.63	....	.57	.57	.57	.57	.5	.57
16-16.9	.63	.63	.61	.61	.58	.61	....	....	.61	.61	.61	.61	.61	....	.57	.57	.57	.57	.57	.57
17-17.9	.61	.61	.59	.59	.55	.59	....	....	.59	.59	.59	.59	.60	....	.57	.57	.57	.57	.57	.57
18-18.9	.60	.60	.57	.57	.52	.57	....	....	.58	.57	.57	.58	.59	....	.57	.57	.57	.57	.57	.57
19-19.9	.58	.58	.55	.56	.49	.56	....	....	.57	.56	.55	.57	.58	....	.57	.57	.57	.57	.56	.56
20-20.9	.57	.57	.53	.55	.46	.55	....	....	.56	.55	.54	.56	.57	....	....	.57	.57	.57	.55	.55
21-21.9	.56	.56	.52	.54	.43	.54	....	....	.55	.54	.53	.55	.56	$.57	....	.56	.56	.56	.54	.54
22-22.9	.55	.55	.51	.53	.40	.53	....	....	.54	.53	.52	.54	.55	.56	....	.56	.56	.56	.53	.53
23-23.9	.54	.54	.50	.52	.39	.52	$.55	....	.53	.52	.51	.53	.54	.55	....	.55	.55	.55	.52	.52
24-24.9	.53	.53	.49	.51	.38	.51	.54	....	.52	.51	.50	.52	.53	.54	....	.54	.55	.54	.51	.51
25-25.9	.52	.52	.48	.50	.37	.50	.53	....	.51	.50	....	.51	.52	.54	....	.53	.54	.54	.50	.50
26-26.9	.51	.51	.47	.49	.36	.49	.52	....	.50	.49	....	.50	.51	.53	....	.52	.53	.53	..	....
27-27.9	.50	.50	.46	.48	...	.48	.51	....	...	.48	....	....	.50	.52	....	.51	.52	.53	..	....
28-28.9	.49	.49	.45	.47	...	.47	.50	....	...	.47	....	....	.49	.51	....	.50	.51	.52	..	....
29-29.9	.48	.48	.44	.46	...	....	.48	....	...	.46	....	....	.48	.50	....	.49	.50	.51	..	....
30-30.9	.47	.47	.43	.45	...	....	.46	....	...	Kettleman Hills			.47	.49	....	.48	.49	.50	..	....
31-31.9	.46	....	...	.44	...	....	.45	....	...				.46	.48	....	.47	.48	..	..	....
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34-34.9	...	....	...	...	...	....	....	.49	...		.61		.43	.45	....	...	....	..	..	....
35-35.9	...	....	...	...	...	....	....	.48	...		.60			.44	....	...	....	..	..	....
36-36.5	...	....	...	...	...	....	....	.47	...		.59		...	.43	....	...	....	..	..	....
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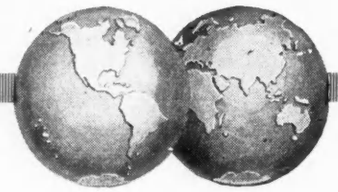
38-38.9	...	....	...	...	...	....	....	....	...		.57		...	.41	....	...	....	..	..	....
39-39.9	...	....	...	...	...	....	....	....	...		.56		...	....	....	...	....	..	..	....

[1] Subject to Field Gathering Charge of 5 cents per barrel.
[2] F.O.B. Ship.

WORLD DEVELOPMENTS and TECHNOLOGY



Edited by
WM. V. GROSS, Associate Editor

CHINA OIL REMOTE

Transport would make production uneconomic

Known petroleum reserves of Sinkiang, China, are not likely to become market factor fields even if developed by drilling, according to a letter received by THE OIL WEEKLY October 10 from P. R. Josselyn of Hankow, China.

Josselyn's letter points out that freight charges to the nearest seaport would be so great as to kill all chances of Sinkiang oil competing with imported products. On the other hand, he points out another deterrent in that Russia constitutes the nearest potential customer for any oil that might be produced, and Russia is already producing from around Lake Balkhash and in the Ferghana Valley, both near Sinkiang.

Josselyn quotes M. M. Feldman to establish the impracticability of piping oil from Sinkiang to the coast of China. Feldman states such a line would be 3000 miles long, better than twice the length of the famous Iraq pipe line.

MEXICO

Guillermo A. Alonso, president of the National Association of Petroleum Producers in Mexico, recently urged upon the Mexican Ministry of National Economy the adoption of an "open door" policy for the petroleum industry to cut down unemployment and better the economic condition of the nation.

Speaking of the advisability of legally prohibiting development of petroleum reserves, Alonso declared in effect that if production activities were resumed on scales comparable to those existing in 1920, 1921 and 1922 there would still be enough oil left in known reserves to last Mexico for several hundred years. He called attention to the increased revenue the federal and state governments would have provided if the "open door" policy were established.

BAHREIN ISLAND

K. R. Kingsbury, president of Standard Oil Company of California, recently visited in New York with the reported purpose of attempting to make some arrangement for disposition of crude oil produced on Bahrein Island, Persian Gulf.

While no announcement was made concerning the result of his trip, Standard Oil Company of California must either provide its own outlet for production of about 25,000 barrels per day or dispose of it to other organizations taking crude oil from Near East oil fields.

Standard Vacuum Oil Company, which is a joint interest of Standard Oil Company of New Jersey and Socony-Vacuum Corporation, the Royal Dutch-Shell interests, and Anglo-Iranian Oil Company are said to be those considered more likely as potential takers of the Bahrein production.

TO INCREASE OUTPUT

In an exclusive interview granted THE OIL WEEKLY October 24 by official of one of the Mexican oil companies, it was stated that "Petromex," the government owned oil company organized in Mexico early in 1934, is finally taking definite steps to build up substantial daily production of crude oil.

According to this official, who asked that he be not quoted, "Petromex" has made a contract with Sam Katz, independent operator in Mexico, to drill 10 wells, two of which will be drilled in Poza Rica and the remainder in holdings of "Petromex" elsewhere.

The Poza Rica wells will be expensive propositions, as it is estimated an expenditure equivalent to $150,000 of United States currency will be necessary for constructing a roadway to the locations.

Poza Rica field, Mexico's greatest "find" in recent years, is now being largely operated by El Aguila and Sinclair under a unit operation plan.

ITALY

Italy, with an estimated consumption of 50,000 barrels per day of crude oil and its derivatives, has been buying a major portion of its oil for the past six months from Rumania. During this period Rumania shipped to Italy an average of 27,500 barrels per day of crude oil and its derivatives as against 17,000 barrels per day during the corresponding period of 1934, according to figures appearing in La Revue Petrolifere.

MEXICAN GAS LINE

Citizens of Piedras Negras, Coahuila, Mexico, recently formed Compania Nacional de Gas, S. A., for the purpose of piping gas from Maverick County, Texas, for domestic consumption, according to Stewart E. McMillin of Piedras Negras. The Mexican company's franchise with the city of Piedras Negras is for 15 years, as is its contract with the producer of gas in Maverick County.

NOT PROSPECTING

Company denies rumor of work in South Africa

Recently published reports that General Mining and Finance Corporation, Limited, had been engaged lately in preliminary geological work on certain structures in the Union of South Africa to determine the advisability of drilling for oil are without foundation, according to a letter received last week by The Oil Weekly from F. W. Chambers, manager of the corporation.

Mr. Chambers' letter states in part: "The rumor you refer to is without foundation. We understand the government of the Union of South Africa has done a certain amount of investigatory and geological work in this connection, but we have not seen any report issued on the subject.

ARGENTINE OUTPUT

Comodoro Rivadavia continues to lead all other fields in the Argentine republic in production, having produced during the first six months of 1935 more oil than the others combined.

Production of crude oil in the Argentine in the first half of the year totaled 1,122,163 cubic meters, including both state and private production. Of this amount Comodoro Rivadavia fields produced 893,000 cubic meters. (A cubic meter is 6.2897 American barrels.)

State produced (Y.P.F.) oil in the Argentine during the half year amounted to 463,563 cubic meters, and that produced by private companies totaled 658,600 cubic meters.

Salta field ranks second among Argentine producers, being credited with a recovery of 151,600 cubic meters during the first six months of 1935. Production of other fields during the same period was as follows: Plaza Huincul, 72,400 cubic meters; Mendoza, 4900 cubic meters; Jujuy, 263 cubic meters.

GERMAN WILDCATTING

Bavarian Oil Corporation of New York, acting through its subsidiary, the Bayerische Mineralindustrie, A. G., of Munich, Germany, is reported to be contemplating starting an extensive wildcat drilling campaign in Germany before the close of 1935. The subsidiary, controlled 90 percent by Bavarian Oil Corporation of New York, five percent by the Bavarian government and five percent by private shareholders, is said to hold mineral exploitation rights on all of Southern Bavaria between the Danube river and the Austrian border.

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We Went to Mexico

[*Continued from page 10*]

Pancho Villa stabled his horses, or at the Hotel Monterrey, and after supper, have a native English speaking guide take you to the beautiful Jardines Terpiscore, a wonder spot of vines, flowers, tiles, fish bowls, pavilions and dance floors. Then see Monterrey at night from the high hill of the Bishops Palace—it reminds you of Denver at night from Lookout Mountain.

The following day drive 176 miles over paved road to Victoria for lunch. On the right or west as you go you parallel the Sierra Madre mountain front, looking all the world like the Rocky mountain front from Denver to Colorado Springs. From Victoria south you soon pass the Tropic of Cancer and geographically enter the tropics. Banana plants, palms, jungle vegetation, parrots and chattering jays appear. The road is good gravel. Due south 140 miles is the town of Valles of about 4500 people, mostly Mexican Indians. Just beyond here you ferry the Rio Tampaon and in close succession the Rio Axtla and the Rio Moctezuma, all mountain streams, deep, swift and about 1000 feet wide. As darkness settles over the nearby mountains you reach the quaint Indian village of Tamazunchale, 67 miles south of Valles. Two new small tourist camps provide reasonably good accommodations.

The following day you immediately enter the Rio Moctezuma Canyon and start climbing, from elevation of about 100 feet to elevation 5800 feet in fifty miles. This is the steepest and most mountainous part of the trip. Gravel crews are working, steam shovels are removing landslides and rock crushers are busy. The road is rocked for entire distance but still one way in spots and subject to unexpected closures. It takes four hours to make the 65 miles to Jacala, a picturesque Indian town nestled in a fertile valley between mountain ranges. Have lunch at Tom Simpson's Hotel and have him tell you of the Otomi Indians and gold and silver mining.

Leaving Jacala your highway rises rapidly to nearly 7900 feet and 20 miles out you are skirting around 3000-foot vertical walls of Cretaceous limestone that offers the most magnificent mountain scenery in the world that can be had from a paved roadway. Passing through Ixmiquilpan (Ix pronounced like ish), a quaint town with massive cathedral founded in 1548, you rise finally to over 8200 feet, the maximum elevation of the highway. From this height the road slopes off to the great central plateau of Mexico at a general elevation of 7250 feet. From Jacala to Mexico City, 168 miles, the road is practically all paved or smooth hard-packed gravel.

The Pan-American highway is not yet officially opened. It may be opened in December. The three bridges now being built over the ferry routes will soon be completed. While the road is passable throughout it is not yet recommended for tourist travel.

Mexico City

Our visits to the historic spots of Mexico City reminds one of the story of the American tourist couple who arrived in Rome in the morning and Mary advised John to visit the monasteries and churches while she visted the museums and monuments and return at noon to leave for France. We had thirty minutes in the National Museum, time enough to see the famous Aztec calendar stone and have a custodian give us a few private pointers on Aztec statuary.

Chapultepec Castle is steeped in memories of a phantom empire (read the Phantom Crown), the royal home of Emperor and Empress Maximilian and Carlotta. Their paintings, crested furniture, bathrooms and salons are much as they left them in 1867. The view of the city and distant Popocatepetl and Ixtlacihuatl, volcano peaks, from the veranda is strikingly superb.

From Chapultepec Hill we were driven to the home of Mr. and Mrs. Henry Norweb, legal advisor to the United States Embassy and graciously received by them.

In the evening a concert was given by the National Symphonic Orchestra in the National Theatre (Palacio de Bellas Artes) under the auspices of the Ministry of National Economy. Seated in this lavish theatre, one is deeply impressed with the vastness of the dome, the beauty of the colored marbles, the stained woodwork and red velour seats, and most imposing of all the great glass curtain shielding off the main stage and before which the orchestra was ranged. This work of art contains tens of thousands of pieces of stained art glass, assembled by Tiffany of New York and framed in bronze. The vast curtain is a panorama of the two volcano cones of Mexico City, Ixtlacihuatl (the Sleeping Woman) and Popocatepetl (the Smoking Mountain). So faithfully has the artist portrayed his picture that one can see, with the Aztecs who named the mountain, the form of a sleeping woman with hands folded across her breast, and the eternal snow her covering blanket and snowy glaciers her unbraided gray hair. So fairy-like and transparent is the entire panorama you overlook the fact the curtain alone weighs nearly 33 tons.

At San Angel near the edge of the city we were shown human remains found under 50 to 100 feet of solid lava. It is believed the lava flows are from 4500 to 10,000 years old.

The "Desert of the Lions" is a deserted Carmelite monastery founded in 1606, high up in pine forests nearly 3000 feet above the city. The name "Desert" in' Spanish is "Desierto" and means both desert in the sense of the Sahara and deserted or abandoned or devoid of people. In this connection the latter sense is implied. The "lions" apply to mountain lions found in that region. A new concrete road makes the spot available. By candle-light one can explore dungeons, secret labyrinths and tunnels. By daylight one can wander through roofless chambers, chapels and spacious walled gardens.

Between trips to ancient civilizations, the dinner dance at the Regis Hotel was given. The "Don Quixote Room" was decked with bunting, flags, and flowers. The orchestra was resplendent in flowing red ties, black velvet coats, vests, and trousers heavily trimmed in silver. Balloons, whistles, rattles, favors in glassware, dancing girls in costume, singers, and the strains of "La Cucaracha" and "Cielito Lindo" are pleasant memories of this evening.

The trip to Cuernavaca and Taxco occupied one entire day. It should have been two or three days. At Cuernavaca there was small time to visit the Cortez Palace, the Pyramid of Teopanzolco and the famous Borda gardens. We had to pass up the wonderful cathedral with the gold plated altar. Taxco, about 125 miles due south of the city on the Pacific slope ranges, is a mining town founded by Cortez in 1522 when he opened here the first gold and silver mines by white man in the American continents. Lowell Ridings, American geologist and mining engineer, is operating here a modern gold and silver mine establishment. He served as host and guide to the convention visitors. Taxco itself is one of the most typical and yet unique Spanish Indian towns in all Mexico and for the last two hundred years was practically unknown and undiscovered. The recent building of the Mexico City-Acapulca highway rediscovered it. Indian silversmiths and native artists give distinction and character to the place.

Xochimilco floating gardens about 20 miles from the City have unique appeal. They represent the last remnants of the once large lake within which Mexico City was founded. As the lake was progressively drained the canals and waterways of Xochimilco were alone retained. Today the once floating barges of the Aztecs are grounded forever and flowers and vegetables grow over the scattered and isolated ground plots. As in Venice the visitor can be poled around in a flat bottomed boat serenaded by marimba, salterio, and base guitar. Carnations, violets, pansies and the abundant yellow, daisy-like flower called "Cenpasuche" abound everywhere. Floating photographers and trinket salesmen give a Coney Island touch. The curious tall trees, almost branchless, called "Souze huejote" give native touch.

Unfortunately, space does not permit a description of the trip to the National Palace and the famous Cathedral, one of the world's greatest buildings. Mention should be made of the National Pawnshop, the vegetable and flower markets, the Tree of the Dismal night and the Vizcainas Convent.

A visit to "Franton Mexico," where Jai Alai" is played and orange capped "bookies" shout back and forth the betting odds in Spanish, is an unforgetable memory. "Jai Alai" is said to be the fastest game in the world played on two feet. It's fascinating to hear in the midst of an exciting play a stout elderly lady sigh in English, "Ah! but you should stay till Tuesday, when the greatest 'Jai Alai' player in the world arrives from Spain."

The folkloric concert given Saturday afternoon by the Geologic Institute of Mexico on the open veranda of Chapultepec Castle was most picturesque. Director Miguel L. de Tejada was delightfully democratic and his orchestra, singers and dancers were warmly applauded.

Bull fight? Yes, on Sunday afternoon but we were heading for home by Sunday noon. Read "Death in the Afternoon," by Heminway.

The final feature of the trip was the Aztec Indian demonstration at the Pyramids of Teotihuacan. This im-

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posing spectacle of some 2000 Indians in the costumes of the Ancient Aztecs was held to celebrate the "Creation of the Fifth Sun and Gladiatory Sacrifice." The weird native music of Aztec flutes and wooden kettle drums, the orange, red and yellow costumes and feathery headdress, masks depicting eagles, bears, bulls and unnameable beasts, the strange dances half Voodoo, half Oriental, rows of soldiers and police, food and fruit stands, pottery and trinket vendors and, thousands upon thousands of spectators, make a confused but vivid mental picture. The Pyramid of the Sun and the one of the Moon rival in size and construction their ancestral types in Egypt.

Every good convention develops one or more good stories. Adventures in a foreign land with a strange language lead to many anomolous situations, some amusing, some otherwise. Like the sign on the Chinese restaurant translating Mexican Spanish to Tex Mex English "Chap Suiy" things sometimes get mixed.

Royal Entry

Early on the morning preceding the convention it was rumored that President Levorsen of the A.A.P.G. would enter town leading the geologist tourist procession. With typical courtesy, tact and a sense of the fitness of things, an escort of several motorcycle police went out the highway, before the city, to accompany the president to his suite at the Hotel Regis.

Down the highway, with the early dawn, thinking naught of his drilling contracts in Texas, came genial Henderson Coquat, with Mr. and Mrs. Adolph Dovre of San Antonio as guests. A sharp blast, with motorcycle stacatto accompaniment, and Henderson screeched to a stop. Henderson's thoughts were something like this, "Caught speeding again, d--n, I knew I couldn't figure kilometers into miles per hour, well I'll show 'em a Texas Railroad Commission permit to drill a well, d--n."

"You? A.A.P.G.?" the officer asked in difficult English.

"Yes," faltered Henderson.

"Follow me."

"Yes, sir, I mean, Si, senor gracios."

With a scream of sirens the escort started, Henderson preceded and followed by motorcycles. Fifty miles an hour down the Clayado de Guadulupe, right on to the Cinco de Mayo, into Avenida Juarez to the Hotel Regis. Traffic and stop lights brushed aside. Before the Regis the escorts saluted "El Presidente" and stepped aside. Henderson said "Thank you," wiped off the perspiration and with presidential steps entered the hotel.

Yes, No Eggs!

Darkness had settled over the mountains at Tamazuchale as three cars rolled into a tiny but new tourist camp at the edge of the town. Al Smith, wife and sister, "Pops" Harkins and wife in one car, Al Jennings and wife of Corpus Christi in the second and John Vetter and writer in the third. All hotels full, everything taken, and here only two rooms, 25 feet square each, open. The four "senoras" and five "hombres" divided the accommodations.

The Mexican Indian "senora" in charge said something in Spanish that sounded like "Would we like breakfast in morning?" "Yes, we would," pooling our knowledge of Spanish to get the idea across. The conversation went like this,

"Senora, manana we want huevos."

"Si, senores—"

"Dos huevos coda por nueve personas."

"Que dice usted?"

"Yes dos huevos for each personas."

"Ah senores—"

"Boiled eggs for me," says Mrs. Smith.

"How do you say boiled eggs?"

"Senores! Senores—"

"Eggs any style for me, Si, dos huevos par cuatro mujeres and cinco hombres."

(Smith after struggle finds Spanish dictionary in bottom of baggage) Boiled eggs—let's see, "boiled," boiled, page 8, no can find.

"Si, senores—"

"Now once more, Senora, manana dos huevos coda por todas personas."

"Si, si, senores, no hay huevos."

"What, no eggs!"

"Si, Senores, no hay huevos."

"No eggs! No eggs! No eggs! It dawned at last. No breakfast here, but Royal cafe, a mile away. When Al Jennings, who didn't pretend to know any Spanish got the point that there never were any eggs to begin with—well the Tex-Mex speaking boys folded up and silently stole away.

We felt a little like the colored boy trying to read a letter when reprimanded by his older brother.

"Nigger, how you expect read writing when you can't read reading yet."

Whether you go to Mexico City as a geological delegate, or a Lion, or Rotarian or Moose, or as a plain American tourist, you will find yourself in a different world; historic spots, natural beauty, affable hospitable people—and you will find it hard to leave.

EXPECT BIG SHOW

Houston.—It is the aim of the Seventh Annual Oil Equipment and Engineering Exposition to be held in Houston from April 20 to 26, inclusive, to present the latest in equipment to oil men. The show covers all branches of the industry and will offer for inspection equipment used in drilling, production, refining, natural gasoline manufacture, pipe line and all divisions of transportation.

Plans for the display of oil equipment have been in progress for several months and, according to E. G. Lenzner, general manager, a representative line of all types of tools and machinery have been arranged for already. The number of exhibits and the completeness of the displays will, from present indications, be considerably greater than at any previous Oil Equipment and Engineering Exposition.

The demonstration of equipment will be featured and extensive outside space will be provided for the purpose. Provision also will be made for demonstrating methods of operation in meeting unusual conditions. The matter of safety in all branches will be stressed, with first-aid work being carried on in contests during the entire time the show is in progress.

NOMINATING BODIES
Are appointed for annual A. P. I. meeting

ANNOUNCEMENT has been made of the appointment, by American Petroleum Institute vice presidents for production, refining, and marketing, of nominating committees which will select 20 members of the Institute's Division of Production, Refining, and Marketing for election to divisional general committees for 1936. Elections will be held at the Institute's 16th annual meeting at Los Angeles, California, November 11 to 14.

In addition to 20 members of general committees to be elected by divisional membership, the Institute's Board of Directors will appoint five members to complete the full general committee membership of 25.

Vice President for Production, George A. Hill, Jr. of the Houston Oil Company, Houston, Texas, has appointed the following as members of the Division of Production nominating committee:

Chairman, F. F. Hill, Union Oil Company of California, Los Angeles; E. L. Adams, General Petroleum Corporation of California, Los Angeles; A. W. Ambrose, The Empire Companies, Bartlesville, Oklahoma; J. A. Birmingham, The Texas Company of California, Los Angeles; E. H. Blum, Atlantic Oil Producing Company, Dallas, Texas; M. E. Brock, Gulf Production Company, Houston; Charles Bunje, Jr., Illinois Pipe Line Company, Findley, Ohio; H. H. Hill, Standard Oil Company of New Jersey, New York; R. S. McFarland, Texas Seaboard Oil Company, Dallas; S. W. Meals, Carnegie Natural Gas Company, Pittsburgh, Pennsylvania; A. H. Riney, Phillips Petroleum Company, Bartlesville; C. C. Scharpenberg, Standard Oil Company of California, San Francisco, California; D. R. Snow, Barnsdall Oil Company, Tulsa, Oklahoma; Chase Sutton, The Pure Oil Company, Houston, and M. B. Sweeney, Sun Oil Company, Dallas.

Vice President for Refining, W. G. Skelly of Skelly Oil Company, Tulsa, Oklahoma, has appointed the following as members of the Division of Refining nominating committee:

Chairman, L. F. Bayer, Associated Oil Company, San Francisco; T. G. Delbridge, The Atlantic Refining Company, Philadelphia, Pennsylvania; H. F. Glair, Standard Oil Company (Indiana), Chicago, Illinois; R. E. Haylett, Union Oil Company of California, Los Angeles; L. R. Holmes, The Texas Company of California, Los Angeles; E. W. Isom, Sinclair Refining Company, New York; W. W. Lowe, Henry L. Doherty Company, New York; Walter Miller, Continental Oil Company, Ponca City, Oklahoma; G. G. Oberfell, Phillips Petroleum Company, Bartlesville, Oklahoma; A. E. Pew, Jr., Sun Oil Company, Philadelphia; J. B. Rather, Socony-Vacuum Oil Company, Inc., New York; A. S. Russell, Standard Oil Company of California, San Francisco; Herschel G. Smith, Gulf Refining Company, Philadelphia; F. W. L. Tydeman, Shell Development Company, San Francisco, and H. C. Wiess, Humble Oil & Refining Company, Houston, Texas.

Vice President for Marketing, C. E. Arnott of Socony-Vacuum Oil Company, Inc., New York, has appointed the fol-

lowing as members of the Division of Marketing nominating committee:

Chairman, B. I. Graves, Associated Oil Company, San Francisco, California; C. S. Beesemyer, Gilmore Oil Company, Los Angeles,; E. J. Bullock, Standard Oil Company (Indiana), Chicago; R. K. Davies, Standard Oil Company of California, San Francisco; G. A. Perryman, Socony-Vacuum Oil Company, Inc., New York; R. R. Griffin, Shell Union Oil Corporation, New York; Henry Hauseman, The Pure Oil Company, Chicago; O. H. Gundlach, Sinclair Refining Company, New York; R. T. Herndon, The Texas Company of California, Los Angeles; H. C. Myer, Gulf Refining Company, Pittsburgh, Pennsylvania; G. G. Oberfell, Phillips Petroleum Corporation, Bartlesville, Oklahoma; E. Power, Union Oil Company of California, Los Angeles; H. B. Stone, The Atlantic Refining Company, Philadelphia; C. E. Townsend, Sun Oil Company, Philadelphia; and R. A. Wotowitch, Warner-Quinlan Company, New York.

AD VALOREM CASE

AUSTIN.

THE State Comptroller cannot be compelled to accept state ad valorem taxes offered with the discount for early payment provided under Section 1, Chapter 1, Acts of the 43rd Legislature, according to a decision handed down by the Texas State Supreme Court in an opinion written by Judge Richard Critz, who held that the law was unconstitutional.

The attorney general had advised the comptroller that the law was unconstitutional. The opinion resulted from a suit brought by Rowan Drilling Company and Magnolia Petroleum Company.

Judge Critz pointed out that the interpretation of constitutional law held that more than one valuation of property for ad valorem taves in the same year is prohibited. He contended that this was the only construction of the statute involved which could be placed upon it.

Although filed by oil companies, the suit affected all ad valorem tax payers in Texas, many of whom have tendered payments in advance to receive the discount offered.

NATURAL GASOLINE UP

Pampa, Texas.—Natural gasoline production in the Texas Panhandle was restored to a near normal basis during September with a total yield of 22,259,580 gallons as compared to 18,604,950 gallons during August. This increase of 3,654,630 gallons was due to the plant owners having temporarily enjoined the state from enforcing recently enacted gas waste measures, which became applicable to sweet gas areas on August 1 and in the sour gas belt on October 1. Production for August dropped 7,547,190 gallons before relief was granted by Federal Court judges. Dissolution of the injunctions, which permit plants to waste about 1,000,000,000 cubic feet of residue gas daily, will be attempted by the state on October 28 when a hearing on the merits of conservation order will be conducted by a three-judge federal court.

Big Fox Well

FIRST DEEP PRODUCTION IN SOUTH OKLAHOMA FOUND

WEEKLY STAFF REPORT

Tulsa.—Carter Oil Company has ordered its new gusher, Williams 1, in Section 27-2s-3w, southwest of the old Fox pool of Carter County, and which blew in late Thursday afternoon as a 10,000 to 12,000-barrel well at 8088 feet, killed. The hole is uncased from 4909 to total depth, and after it is killed it will be cased and retested.

The discovery makes promising for future drilling a vast area south of the Arbuckle Mountains in southern Oklahoma, and makes many geologists feel that Preston Anticline, and Cisco trends across the Red River into northern Texas, are more promising for future production than have heretofore believed.

The well put 18 inches of oil into a pit 120 feet square in eight hours, and on that basis was estimated by operators as doing 500 barrels an hour. The coming in of the new well is the biggest thing that has happened in Oklahoma oils in several years, oil companies said today. The well is the first deep producer in South Oklahoma.

Carter Oil Company officials state that the source of the oil is somewhat of a guess since there had been numerous shows and stains of oil in cuttings and cores during the last 1000 feet. However, it is thought the well is either in the Wilcox or Arbuckle formations.

Surrounding production is from 2000 and 3000-foot levels, which formations have settled to stripper production.

Eastern Oklahoma

Indian Territory Illuminating Oil Company has staked location for Ocie Tancred 1, SWc NW SE 9-9n-14e, near the little town of Carroll, and west of Eufaula, in McIntosh County. Cable tools will be used by contractors, Haley and Holleran of Okmulgee. It is in the center of a 5000-acre block, and with adjacent blocks held by Phillips Petroleum Company, Magnolia Petroleum Company and others.

If a successful producer in the Wilcox sand, expected at 4500 feet, it is expected to definitely launch the eastern Oklahoma revival that everyone is anticipating. A scrutiny of the records of McIntosh, Pittsburg, Latimer and adjacent counties shows many thousands of acres of leases held by virtually every active Oklahoma company.

Extensive seismograph surveys have been made and are still under way in the region, situated north to northeastwards from the Fitts pool of southeastern Pontotoc County.

Forty-eight first reports were observed in 16 counties of Oklahoma's active oil areas the week just ended, compared with 49 the previous week and in 18 counties, Pontotoc County led with nine, and Osage and Seminole Counties tied with seven each for second place, while Creek and Okmulgee were tied with four each for third position.

A slight increase was observed in the completion summary. Fifty-seven tests were finished. Thirty-six new oil wells had an initial flow of 39,824 barrels a day. There was a loss of two new producers and 3018 barrels in new output in comparison with the previous week. Three gas wells had an open flow of 58,500,000 cubic feet; one abandoned location and 17 dry holes completed the summary.

A total footage of 166,004 feet was reported, with two wildcat failures accounting for 6093 feet; five old wells deepened for 1994 feet, and 157,917 feet for the remaining 50 wells that were actually drilled.

POTENTIAL DECLINES

Oklahoma City wells are off 41 percent

Oklahoma City. — New potentials have been completed for 305 Wilcox sand wells in the Oklahoma City field, and official figures from the Corporation Commission show them to have a potential of 242,984.25 barrels a day, compared with that of 414,558.60 barrels on the April gauging. It reveals a 41.39 percent decrease in potential.

Twelve new wells completed in the past month were given a potential rating of 43,906.36 barrels a day, offsetting part of the natural decline of older wells.

The 201 wells taking a wide open flow gauge showed a new potential of 191,077.76 barrels, compared with 258,599.34 barrels in April, a decline of 24.95 percent. The 104 wells that took a decline curve production test dropped in total potential from 155,959.26 barrels in April to 48,906.49 barrels.

The commission is busy completing the tests on wells in the other areas of the field.

OKLAHOMA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ATOKA COUNTY—		
Phelps' Kemp 1, se sw ne 22-1s-12e.	*	785
Wilkerson's Gilbreth 3, nw se se 5-1n-15e	*	680
CARTER COUNTY—		
Ed Shell et al's Ratleff & Spears 5, nw nw sw 28-1s-2w	*	555
Sinclair Prairie Oil Co.'s Millon & Thomas 29, se sw se 5-4s-3w	*	1050
COMANCHE COUNTY—		
Hawkins et al's School Land 1, ne sw se 20-2n-10w	*	972
CREEK COUNTY—		
Sinclair Prairie Oil Co.'s Kernal 4, nw ne se 30-14n-8e (otd 3406)	90	4021
John Barrows' Flinchin 3, se se sw 11-19n-9e	35	1207
GRADY COUNTY—		
Magnolia Pet. Co.'s Harrison 6, nw ne ne 28-3n-5w (otd 1795)	25	1836
HUGHES COUNTY—		
Manahan Oil Co.'s Dixon "B" 4, sw se nw 12-9n-8e	150	1766
Crescent Oil Co. et al's Roberts 1, cse se 5-8n-10e	¶20	3094
LINCOLN COUNTY—		
Stanolind O&G Co. et al's Craig 3, se nw nw 12-14n-3e	lcn.	abd.
LOGAN COUNTY—		
Carter Oil Co. et al's Herren 3, cnw ne 28-17n-4w (pb 6332)	27	6350
Phillips Pet. Co.'s Pfeiffer 1, cne ne 4-14n-2w	282	5157
Gypsy Oil Co.'s Pfeiffer 1, cn½ sw se 33-20n-2w (otd 5139)	1110	5145
MARSHALL COUNTY—		
Leavell Coal Co.'s Burge 10, sw se se 25-7s-5e	15	530
MUSKOGEE COUNTY—		
Home O&G Co.'s Barnett 5, cwl se se 34-16n-15e	*	1214
NOBLE COUNTY—		
Stanolind O&G Co.'s Kolb 2, csl sw ne 33-20n-2w	*	152
OKFUSKEE COUNTY—		
Pure Oil Co.'s Rentie 1, se nw ne 26-12n-11e (otd 2646)	¶13¼	2888
Ralbern's Johnson 1, cne ne 11-11n-8e	500	3906
OKLAHOMA COUNTY—		
Larkin & Warr's Marti 1, se se ne 34-12n-3w	3762	6381
American Oil Co.'s Washington Park 5, nw nw sw 35-12n-3w	¶9-549	6363
Erie Oil Co.'s Williams 1, se sw nw 35-12n-3w	*	5680
Phillips Pet. Co.'s Vera Lee 1, ne sw ne 34-12n-3w	4289	6554
Erie Oil Co.'s Fuller 1, sw sw nw 35-12n-3w	45	6434
Phillips Pet. Co.'s Freeburg 3, sw sw ne 34-12n-3w	2954	6517
Larkin & Warr et al's Rouner 1, ne ne nw 1-11n-3w	2072	6385
OKMULGEE COUNTY—		
Colpitt's Sells 1-A, sw sw se 14-15n-14e	*	1825
OSAGE COUNTY—		
Barnsdall Oil Co.'s 31, sw sw ne 30-21n-9e	*	2402
Union Oil & Mining Co.'s 5, nw se nw 32-23n-10e	*	1670
Sinclair Prairie Oil Co.'s 6, se nw nw 15-24n-7e	50	2551
Carter Oil Co. et al's 10, se sw sw 15-25n-6e (pb 2826)	150	2844
Carter Oil Co. et al's Kennedy 5, ne se se 34-26n-6e	¶2½-1905	2907
Enterprise Transit Co.'s 6, se ne nw 35-26n-6e	512	2923
PAWNEE COUNTY—		
Stanolind O&G Co. et al's Denton 1, ne sw se 32-22n-3e	*	4317
PONTOTOC COUNTY—		
Delaney's Smith 2, sw sw sw 25-2n-6e	¶2½-3341	4425
Crosbie's Burris 1, ne se nw 27-2n-7e (pb 1300)	¶25	1757
Carter Oil Co.'s Smith 2, nw nw sw 28-2n-7e	¶1½-4937	4330
Smith 3, sw nw sw 28-2n-7e (pb 4368)	¶1½-4922	4450
Moore's Harper 4, nw sw ne 29-2n-7e	¶1¾-3528	4375
Fleetborn Oil Corp.'s Smith 1, nw se ne 31-2n-7e	1711	4363
Moore et al's Witherspoon 1, nw se nw 31-2n-7e (pb 4520)	11	4595
Oakman's Sarkey 2, nw ne sw 8-4n-7e	3	1076
Cooper's Chandler 1, ne se sw 4-5n-6e	*	1776
Morris & Wilson's Gilmore 1, sw sw ne 22-5n-8e	2	935
POTTAWATOMIE COUNTY—		
Atlantic Oil Co.'s Anderson 1, cnw se 12-9n-4e	312	4210
SEMINOLE COUNTY—		
Carter Oil Co.'s Bruner 2, cw½ ne nw 19-10n-6e	240	4619
Carter Oil Co. et al's Cully 2, cw½ nw ne 18-10n-6e	1308	4589
Wood Oil Co.'s Home Stake 1, nw se sw 28-9n-6e	669	4209
Mid-Continent Pet. Corp.'s Marcy 2, ne sw nw 13-9n-6e	70	4056
Magnolia Pet. Co.'s Reed 13, sw sw se 30-7n-8e	*	4303
Empire O&R Co.'s Davis "A" 2, sw ne ne 30-7n-8e (otd 3030)	163	4120
Magnolia Pet. Co.'s Dindy 6, se se nw 11-7n-6e (pb 3132)	72	3134
Atlantic Oil Co.'s Gentner 1, se se nw 8-6n-7e (pb 4040)	8	4042
Hardin's Bank Land 1, se se se 13-7n-9e	*	610
STEPHENS COUNTY—		
Raizen Bros' Brown 18, sw ne se 2-2s-5w	5	674
Howell & Cooper's Parker 1, sw ne se 11-2s-8w	*	2103
George Pace's Houston "B" 9, cel ne sw 2-2s-8w (pb 2203)	*	2208

*Failures; †Junked; ¶Million cu. ft. gas.

PROPERTY SOLD

Shawnee.—Saco Oil Company of Eldorado, Kansas, has entered the Olympic pool north of Holdenville, in northwestern Hughes County by buying the NW NW 12-9-8e, from George Oliphant for $60,000 in cash and oil.

The Senora sand at 1700 to 1800 feet, is the producing horizon here and it was found when several tests were plugging back from the Wilcox sand, and attempting to salvage casing found the pay.

GEOLOGICAL PAPERS

Tulsa.—Several regions of the United States and Canada are treated in papers appearing in the lately issued October, 1935, Bulletin of the American Association of Petroleum Geologists.

A paper by Edward A. Koester deals with the geology of the Central Kansas Uplift. One by Theodore A. Link discusses types of foothill structures of Alberta, Canada. A. A. Baker is author of a paper on the geologic structure of Southeastern Utah. Sheridan A. Thompson has a paper on the Fredericksburg Group of the Lower Cretaceous, with special reference to North-Central Texas.

Geological Notes of the month's issue number two, both by John L. Rich: one dealing with the graphical method for eliminating regional dip, and the other discussing the fault-block nature of Kansas structures suggested by elimination of regional dip.

KANSAS DECLINES

Wichita.—New field work declined sharply in Kansas the week just ended. Only 16 first reports were found in 11 counties, compared with 30 the previous week. Cowley County, where a replay campaign is starting, led with four, and Ellsworth, in Western Kansas, had three. All others had one each.

Thirty-one completions were reported, a gain of one. Twenty-one new oil wells came in, making 34,300 barrels a day, a gain of 11,592 barrels a day over the output of 16 new producers the previous week. Two gas wells had a flow of 52,750,000 feet and eight dry holes finished the summary.

A total of 96,977 feet of hole was cut in the 31 drilled tests, with three wildcat wells that had an output of 961 barrels cutting 10,666 feet; five wildcat dry holes cutting 18,339 feet; two old wells deepened for 2171 feet and all others cutting 65,801 feet of hole.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BUTLER COUNTY—		
Fairview Oil Co.'s Brainard 1, se ne ne 3-25s-3e (pb 2745)	100	2758
Rex & Morris' Shreve 1, cn½ ne se 25-26s-4e (pb 2664)	*	2670
COFFEY COUNTY—		
Oko Oil Co.'s Kelly 23, ne se sw 14-23s-13e	15	1800
ELLIS COUNTY—		
Palmer & Storm King's Bowlby 1, cn½ n½ nw 13-11s-16w	*	3695
ELLSWORTH COUNTY—		
The Texas Co.'s Dees 4, se se nw 23-17s-9w	745	3208
The Texas Co.'s Dees 5, nw nw nw 23-17s-9w	1743	3172
Lario O&G Co. et al's State 1, sw sw sw 29-15s-8w (otd 3004) (pb 2525)	*	3937
Bradley Oil Co.'s Mahoney 6, nw sw se 14-17s-9w	1609	3183
Skelly Oil Co.'s Dees 5, sw se sw 14-17s-9w	2260	3178
Phillips Pet. Co.'s Melchert 2, sw sw ne 23-17s-9w	1160	3200
GRAHAM COUNTY—		
Helmerich & Payne et al's Stites 1, csw sw 8-10s-22w	*	4220
HARVEY COUNTY—		
Sunray Oil Co.'s Ewy 1, se ne se 14-22s-2w (pb 2955)	¶12¾	3515
Derby Oil Co.'s Hiebert 2, sw sw se 5-22s-3w	275	3549
McPHERSON COUNTY—		
Stanolind O&G Co. & Amerada Pet. Corp.'s Zerger 6, ne nw se 16-21s-3w	275	3416
RENO COUNTY—		
Phillips Pet. Co. et al's State Bank 1, cse sw 10-24s-4w	137	3375
RICE COUNTY—		
Continental Oil Co.'s Ferguson 1, se nw ne 8-18s-7w (pb 3230)	387	3233
Slick, Pryor & Lockhart et al's Roselar "A" 1, ne ne se	172	3275
Aylward, Hanson et al's Haas 1, ne nw ne 4-19s-10w	*	3365
Stanolind O&G Co.'s Mitchell 1, ne ne sw 32-19s-10w	1777	3306
RUSH COUNTY—		
Aylward et al's Brack 1, csw ¼, 14-18s-16w	¶40	3513
RUSSELL COUNTY—		
Hartman & Blair's Claussen 1, se ne sw 34-12s-14w	*	3122
Alyward & Skelly Oil Co.'s Killion 3, sw se ne 28-13s-14w	1381	3278
Russell Oil Corp.'s Miller 4, sw sw se 30-14s-13w	798	2976
Billings et al's Witt 7, ne ne se 4-14s-15w	1337	3106
Central Pet. Co.'s Benso "B" 2, nw se sw 4-14s-15w (pb 3062)	140	3068
Bridgeport Machine Co.'s Nelson 1, nw nw se 8-14s-15w	*	3332
J. Brouk & R. D. Bailey's Kluesner 1, nw nw se 34-15s-12w	552	3278
SEDGWICK COUNTY—		
Derby Oil Co. et al's Bortholomew 1, sw sw nw 8-27s-4w (pb 4006)	22	4155
T. C. Johnson & Atlantic Oil Co.'s Jones Estate 1, nw ne ne 29-28s-1e	*	3177
SUMNER COUNTY—		
Slick, Pryor & Lockhart's Peasel 3, cs½ n½ nw 33-31s-1w	639	3683
Shell Pet. Corp.'s Rothwell 2-A, sw ne sw 14-32s-2e (otd 1660)	18,776	2898

*Failures; †Junked; ¶Million cu. ft. gas.

Second Producer

COMPLETED IN LONG LAKE EXTENSION AREA

WEEKLY STAFF REPORT

Tyler.—North extension area of the Long Lake field, Anderson County, was adding its second oil producer late last week when Tide Water Oil Company and Texas Seaboard Oil Company's Shaw & Cern 1, Daniel Parker Survey, flowed oil by heads from Woodbine sand at 5345 feet, or 5047 feet sub-sea. Seven-inch pipe was cemented five feet off bottom to case off heavy volume of gas found in the upper section of the Woodbine, which was topped at 5138 feet. Only a small volume of gas appeared with the oil, making it necessary for the owners to swab the hole at intervals to free the sand of rotary drilling fluid. This new well is 933 feet north and west of the original oil producer in the area. F. H. E. Oil Company, Fort Worth, has contracted for a lease covering a portion of the Palestine airport, located about one mile northeast of the above producers, with a drilling obligation pending the approval of a test by the Palestine city council.

Outlook for gas production from the upper Trinity sand series by Tide Water Oil Company and Texas Seaboard Oil Company's Wills 21-A, deep test in the Cayuga field, appeared improbable when swabbing test near the 8100-foot level failed to revive gas showings passed up without testing in making an unsuccessful try for production in the basal Trinity at 9082 feet. The hole has been plugged back and casing perforated at intervals with negative results.

J. S. Abercrombie Company and Harrison Oil Company, Houston, owners of leases covering approximately 35,000 acres in three blocks in Red River County, were logging Red Beds section of the upper Woodbine on their C. A. Rose 1, SEc of tract, Mary Smith Survey, about three miles north of Clarksville, while coring at 1370 feet. This is the sixth wildcat drilled by the partnership on their Red River County holdings in search of production from the lower Woodbine sand. Previous tests have been abandoned at depths ranging from 1032 to 2075 feet. The top section of the Woodbine is impervious to water in this district, while the lower sand generally yields salt water instead of fresh water. The partnership's J. M. Roberts 1, John Ware Survey, about eight miles north of Clarksville, flowed salt water in sand at 569-632 feet, and logged sand at 1120-33 feet, identified as the top section of the Paluxy, that carried black oil testing about 12 gravity. The oil was too heavy to produce. Cleary Brothers, Kilgore, and associates' Oscar Mowery 1, SEc 20-acre lease, J. Bowerman Survey, about three eighths-mile northwest of the above test has drilled to 550 feet, and will attempt to produce from the Paluxy.

Two closely related wildcat blocks on opposite sides of Newsome, located in western Camp County, are receiving Woodbine sand tests. E. R. Smith et al's J. M. Jordan 1, B. Carver Survey, about one mile south of the town, was drilling chalky-shale formation at 3875 feet, having logged a small show of black oil at 3857-62 feet. It has an elevation of 438 feet. E. J. Moran, G. E. and Ray Hubbard, Dallas operators, have moved in rig to drill on an 8000-acre block about two miles north of town. Location is on the W. M. Mitchell 100-acre tract, Louis Rose Survey. Several majors bought protection acreage out of the block.

Shallow oil production from the Nacatoch sand is the objective of a northwestern Henderson County wildcat started the past week by C. & G. Oil Company, Dallas, on the Sterrett tract, H. M. Strade Survey, several miles southeast of Mabank. The company holds leases on about 2500 acres in the area, and location is near an old test that gave promise of developing commercial production from the Nacatoch, which has contributed a few small pumpers on the north and northwest flanks of the Van structure.

COMPLETIONS UP

East Texas has 63 wells completed last week

Tyler.—Completions in the East Texas field were back in stride the past week with an average of nine new wells daily, or a total of 62 oil producers and one gasser for the period. Field work also is on the upgrade, with about 120 active tests listed on current drilling reports.

Based on the number of approved permits to drill issued by the Texas Railroad Commission since the latter part of August an active development program is in store for the field over the remainder of this year. Permits granted on October 18 and 19 totalled 111, with independents receiving 79 of the number. Within the past two months a total of 721 applications have been approved by the commission, including 501 to independents and 220 were obtained by majors. In spite of the high well density already scored by many of the leases participating in these proposed new tests, the commission denied only 89 applications to drill.

Gas volume and reservoir pressure in the gas belt on the south end of the Joiner area is being dissipated rapidly. Sinclair Prairie Oil Company's T. B. Arnold 1, SWc 110-acre lease, Levi Sparks Survey, was credited with a maximum flow of 1,700,000 cubic feet when completed at 3695 feet. The rock pressure registered 230 pounds, as compared to 450 to 475 pounds recorded originally by offset completions. Sun Oil Company's M. O. Spence 1, NEc of 153-acre lease, Couch and Van Sickle Surveys, and a diagonal offset to an old gasser, failed to produce in the regular sand horizon. Formation tester used at 3659-95 feet yielded a small amount of gas and oil. The hole has since been deepened to 3729 feet, or 3331 feet sub-sea, without production increase.

The structurally low producing horizon found along the northwest flank of the East Texas field in Upshur County added a new producer the past week when Sun Oil Company's Frank Medlin 1, SEc 55¾-acre lease, Wm. King Survey, flowed 40 barrels oil in two hours through 5¾-inch casing. The oil sand was penetrated only one foot, using cable tools, and the well is bottomed at 3731 feet, or 3335 feet below sea level. In the field proper salt water is found at this sub-sea depth.

Ten of the completions reported the past week failed to register natural flow, and are scheduled to be equipped for pumping.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Arcadia Ref. Co., Wilson 5 (20-ac)	7500	3753
Ark. F.O. Co., Ferguson 11 (73.8-ac)	8000	3645
Atlantic, J. E. Strickland 9-A-C (31.04-ac)	500	3630
British-American, Eaton 4 (25-ac)	9300	3768
J. D. Stone 11 (66-ac)	7500	3643
Byers et al, Jackson 4 (25-ac)	7000	3762
Centex Oil Corp., Pace 1-B (11-ac)	5000	3740
Elm Oil Co.-F. W. Fischer, Eaton 12-A-B (21.52-ac)	6200	3770
A. Genecov & Roosth, Pace-Bateman 3 (38-ac)	2000	3805
Hammond Oil Co., Holt 2 (40-ac)	240	3591
H. H. Howell et al, Propes 1, (26⅔-ac)	480	3622
Humble, R. E. L. Silvey 51-A (458.97-ac)	11,000	3719
Hunt Prod. Co., Bradford 6-F (55.8-ac)	500	3625
Wooley 9 (53.15-ac)	7500	3707
Mabee Cons'ld Corp., Maxwell 4-A (40.24-ac)	500	3670
Maxwell 4-B (41.1-ac)	600	3692
Marathon, Moores 34 (200-ac)	5500	3692
Marco O&G Co., Lacy-Pure 3 (50-ac)	3800	3683
Lee 3 (44½-ac)	4500	3658
W. L. Sartain et al, Smith 1 (55/100-ac)	4000	3810
Sells Pet. Inc., St. Clair 5 (84-ac)	3000	3751
Wilson 6 (50-ac)	5500	3810
Sinclair Prairie, Wilson 12 (65-ac)	1000	3715
Arnold 1 (110-ac)	1700	3695
Stanolind, Wooley 4 (58.44-ac)	360	3550
Sun, Pace 23-B (637.45-ac)	1000	3797
Texas Co., Stubblefield 4 (45.2-ac)	4000	3660
Texas Canadian Oil Corp., Gilstrap 4 (15.3-ac)	120	3629
Irion 9-C (27-ac)	4500	3761
Pace 1 (35-ac)	5000	3785
Texas Canadian & J. D. Hall, Cherry 1 (2.4-ac)	120	3616
Trentman Oil Corp., Hodges-Greve 4 (12½-ac)	7500	3765
Turman Oil Co., Dark 10 (48.76-ac)	5600	3772

Company, Well and Location	Init. Prod. Bbls.	Depth
KILGORE AREA—		
American Liberty Oil Co., Sabine River 17, Tr 7	9000	3580
G. G. Baggett et al, Still 2 (10-ac)	750	3550
E. Constantin, Jr., Tucker 8 (296-ac)	120	3652
R. C. Lipscomb-Southern & Thurmond, King 7 (96-ac)	7200	3731
Meco Prod Co., Williamson 7 (150-ac)	600	3706
J. M. Rush et al, Crews-Conoco 2 (160-ac)	3000	3696
Stanolind-Noble & Co., King 7 (50-ac)	6000	3755
Sun-Texas Seaboard, Strong 8 (50½-ac)	8000	3621
Tide Water, Clayton 10 (60-ac)	8000	3603
LONGVIEW AREA—		
Ark. F.O. Co., Lee 10 (67.19-ac)	7200	3630
Lee 7-A (52.1-ac)	8500	3567
Tuttle 9 (61.51-ac)	10,000	3602
W. W. Bradley et al (was Kleiner), Smith 7 (28½-ac)	8000	3645
John Coates et al, Buie 2 (13½-ac)	5400	3652
L. C. Collins-Gray & Wolfe, Fisher 9 (134.67-ac)	4500	3429
Camp Drl. Co., Castleberry 1	1000	3569
Lester & Duffield, Graves-Shell 9 (80-ac)	7000	3690
C. H. Lyons-Wadley & Neeley, O'Byrne 8 (70.9-ac)	5400	3701
Magnolia, Christian 13-A (64.95-ac)	7000	3675
Ziegler 16 (120.62-ac)	10,500	3454
Rancho Oil Co., Bumpas 5 (143¾-ac)	7600	3575
P. B. Scott-S. L. G. Oil Corp., McQueen 2 (97-ac)	3000	3597
Shell, Burnsides 21 (160-ac)	8400	3519
Stanolind, Calvin 10 (62.02-ac)	8500	3614
Smith 9 (73½-ac)	9000	3557
Sun, Medlin 1 (55¾-ac)	500	3731
Ramey 13 (86.54-ac)	400	3763
Texas Co., Clark 8 (60-ac)	7600	3637
Urban Oil Co., Phillips 12 (70.93-ac)	10,000	3658
Thibodeaux Oil Corp.-J. J. Jackson, Sanders 10 (45-ac)	8000	3663
ANDERSON COUNTY (Cayuga Field)—		
Skelly Oil Co., A. G. Williams 2 (100-ac)	1000	4101
VAN ZANDT COUNTY (Van Field)—		
Humble, Oliver 3 (59-ac)	750	2945
HUNT COUNTY—		
J. F. Morrissey Co., Inc., P. B. Fry 1-A	†	4442

*Failures; †Junked; ¶Million cu. ft. gas.

LONG LAKE ORDER

Austin.—The railroad commission has revoked its gas proration order on the Long Lake field.

Although exact information as to the cause of this change is not available, it is understood that the unit of 640 acres which was provided in the order has brought protest from independent operators in that area. As a result, a hearing has been called for October 31, at Austin, at which further evidence relating to gas production conditions, and especially the drainage areas of a well in a field, will be considered.

At the last hearing the only evidence presented was that of the Tide Water Oil Company. George Nye, petroleum engineer for the concern, said that in his opinion a gas well in this field will drain as much as 3000 acres.

Nye recommended that a 640-acre unit be used, not because it was necessary to space the wells close together, but merely for convenience because of the nature of the subdivisions of the surface rights to land in the field.

Pampa, Texas.—Withdrawal of 296,800 barrels of crude from steel storage in the Texas Panhandle during September brought the total for the district down to 13,017,900 barrels, according to survey made October 1. This is the lowest level attained within the past four years, and 894,650 barrels below the total reported last January 1.

Deep Wildcat Shows

WADDELL TEST SHOWING OIL AND GAS IN ORDOVICIAN

WEEKLY STAFF REPORT

San Angelo.—Evidence of oil saturation recovered from the Ordovician lime section at 6249 feet by Gulf Production Company's W. N. Waddell et al, deep wildcat project in western Crane County, was rated of sufficient importance to shut down for a drill stem test late last week. The formation tester failed to function on the first try, and the packer was being reset, according to late reports, for another attempt. It is understood that operations will be halted to set casing in the event favorable oil or gas showings appear in the testing tool, as the well has open hole below the 2400-foot level. The Waddell Ranch wildcat is credited with having entered the Simpson lime section of the Ordovician at about 6060 feet, or 3506 feet sub sea, thereby affording an exceptionally high structural position.

Cash bonuses aggregating about $150,000 were expended early in October by companies and operators for lease and royalty protection to the south and southeast of the drilling block on the strength of the high geological marker. Gulf Production Company holds leases on huge blocks in all other directions, but joined in the lease play, which extended south into Pecos County.

Progress on Humble Oil & Refining Company's L. W. Pollok-Gulf 1, projected Ordovician lime test on a wildcat block in northeastern Upton County, was slowed down to about 10 feet of new hole daily towards the end of the week after reaching the hard limestone and chert horizon. Late reports credited the well as drilling at 10,775 feet and in Pennsylvanian lime series. Only 175 feet of hole was made the past week as compared to about 500 feet the previous week when fairly soft shale proved easy to negotiate with the heavy rotary rig.

Showdown on the production possibilities of Honolulu Oil Corporation and C. J. Davidson's L. P. Bennett 1, Yoakum County wildcat, has been postponed indefinitely owing to pending litigation. Court judgments rendered several years ago against an individual, now deceased, alleged to have aided in assembling the drilling block for an interest, serve as the basis of claims against the property filed by several parties. Seven-inch casing was cemented at 4656 feet, with the hole bottomed in oil saturated lime at 5090 feet, or 1533 feet below sea level. The well was standing about two-thirds full of oil when pipe was landed, and a small flow occurred when the cementing contractor established circulation.

Interest in this promising extension of the Permian lime horizon about 40 miles to the north has shifted temporarily to wildcats drilling in sparsely explored counties to the north and south. In southern Cochran County, Humble Oil & Refining Company's Slaughter 1, League 135, Armstrong County School Land Survey, has progressed to the 3550-foot level, having logged first anhydrite at 2307 feet and top of salt at 2248 feet, or about level with previously drilled tests to the north. In the Seminole area, Gaines County, W. T. Walsh and Harry Adams Corporation's S. J. Averitt 1, NEc Section 228, Block G. W. T. Ry. Survey, about 2½ miles northwest of the town, encountered top of anhydrite, the first geological marker, at 1969 feet, with an elevation of 3322 feet. It is about 10 miles removed from previous tests, thus affording little opportunity for

WEST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANDREWS COUNTY—		
Humble, J. S. Means 4	557	4555
Wahlenmaier Pet. Corp., York & Harper, Inc., R. A. Cox 1	*	4812
ECTOR COUNTY (North Cowden Field)—		
Continental Oil Co., Wight 1	*	4457
Stanolind, J. M. Cowden 21	1317	4264
J. M. Cowden 22	693	4236
FISHER COUNTY—		
Geo. Callihan et al, M. E. Herring 1-A	600	3146
Gen'l Crude Oil Co., Wm. Flannigan 6	300	3102
JONES COUNTY—		
Bridwell Oil Co.-L. Fikes, Jennings 2	225	2057
N. H. Martin & Son, King-Dorsey 2	595	1984
Ungren & Frazier, Jennings 1	420	2047
GLASSCOCK COUNTY—		
John I. Moore et al, Erie Miller 1	*	3070
PECOS COUNTY—		
Cardinal Oil Co., Jas. Cornell-Smith 4	24	367
Gulf, White-Baker 7	*	1581
J. C. Ratliff et al, Schariff-Blackman 1	*	1685
UPTON COUNTY—		
Internat'l Pet. Corp., McClintic 3-A	750	3030
Kirk & Whitesides, J. F. Lane 1	165	2251
Shell, Cordova Union 1-B	210	2261
Stanolind, A. S. Burleson 39	753	2052
WARD COUNTY—		
Humble, American Nat'l Life 2	¶10-318	2565
F. G. Leidecker et al, Archenhold-California 1-B	430	3035
WINKLER COUNTY (Keystone Field)—		
Gulf, Keystone 6	129	3676

*Failures; †Junked; ¶Million cu. ft. gas.

correlation of key formations with any degree of certainty of structural position. Cash bonuses ranging up to $100 per acre have been paid by majors for leases within and near Seminole since last spring, based on favorable geophysical surveys.

Operations were halted temporarily at 5014 feet last week on Lou G. Stogner et al's C. C. George 1, wildcat near center of north line of Andrews County, after fulfilling contract depth. No sulphur water was encountered in drilling to a sub-sea depth of 1761 feet, or about 684 feet below the first of a series of oil saturated lime zones. Oil and gas showings passed up are not considered sufficient to yield commercial production with the aid of nitro and acid, but ample structural relief was proved by the drilling of this test to justify additional exploration work in the area. Stogner and associates are attempting to finance a new test on their block.

Keystone Area

Low structural position has been recorded by Sun Oil Company's J. B. Walton 1, NEc S½ Section 8, Block B-3, P. S. L. Survey, Winkler County, about 1½ miles west of production in the Keystone field. Salt series was logged at 910-2340 feet, with an elevation of 2927 feet, and top of brown lime at 2386 feet. Drilling has been resumed after cementing 9⅝-inch pipe at 2398 feet. Sid Richardson et al's J. B. Walton 2, north offset to the first oil producer for the area, developed one-half bailer sulphur water per hour from lime at 3495-3508 feet, while flowing about 100 barrels oil daily. It will be deepened and tested at intervals to observe the water situation. Richardson et al's B. F. Jenkins-Humble 1, SEc Section 13, Block 77, P. S. L. Survey, about two miles northwest of production, was drilling at 3450 feet, having lubricated off the heavy flow of dry gas picked up in the lime section. Gulf Production Company's Keystone 3, located on the west flank of the Keystone structure, flowed 66 barrels oil and 40 barrels water in eight hours through cavings after 385-quart nitro shot in dolomite lime at 3225-3415 feet. It was plugged back from sulphur water at 3765 feet. Work on Keystone 4 and 9 has been temporarily suspended after failing to develop oil production in commercial quantities, while Keystone 8, which was recently given a heavy shot at 4463 feet, is fishing for bailer.

Daily yield of about 10 barrels of 35° gravity oil was gained by Sun Oil Company's L. W. Young 1, southeast Reagan County wildcat, after shooting saturated lime at 2380-2444 feet with 300 quarts of nitro. The well was scheduled to be treated with acid late last week. It will likely be abandoned unless a substantial production increase follows, as a small well would attract a market outlet.

An erratic shallow lime area about 2½ miles south of the Taylor-Link field, Pecos County, revived interest through success met with by Mac T. Anderson, McCamey, and others' T. N. McKenzie 1, C SW SW Section 604, GC&SF (John L. Wright) Survey, developing a steady flow of 18½ barrels hourly on a 22-hour gauge after treating lime at 1338-1365 feet with 1000 gallons acid solution. It was originally completed in July, 1934, rated as a 15-barrel pumper with the hole bottomed at 1378 feet, or 1353 feet above sea level. The hole was plugged back to 1365 feet, and a maximum flow of 35 barrels of oil per hour was attained during the first gauge after using acid. It is an east offset to Illinois Oil Company (was Buell-Hagan's) University-Sun 1, SEc Section 36, Block 18, which opened the area in June, 1929, with a small pumper from lime at 1320-32 feet. Illinois Oil Company acquired the property early last year and boosted the production to five barrels per hour on pump after using acid, but drilled a 1915-foot failure last October in offsetting the producer on the north. Stanolind Oil & Gas Company (was Southern Crude Oil Purchasing Company's) T. N. McKenzie 1, a south offset to the discovery well, missed the oil horizon in drilling to 2312 feet, but succeeded in making a small gasser in March, 1930, after plugging back to 1525 feet. Sun Oil Company owns lease on a large block of University of Texas land lying to the west of the Illinois Oil Company's leasehold, and will likely sublease portions of same for development on an over-riding royalty basis.

H. C. Peck and others are reported to be making preparations to drill a 4000-foot test on a 5200-acre wildcat block in southeastern Winkler County, and have sold protection acreage to major companies. The block is in the northeast corner of Block A, GMMB & A Survey. Contract for a 3000-foot test to be drilled on a block of about 3000-acres, centering about three miles southeast of Westbrook, Mitchell County, has been assumed by Lathan and Dockery, according to reports.

NORTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
Bonner Co. & Kelleher, J. D. Carpenter 1, sec 39	*	1120
L. T. Burns et al, R. Kinder 1, sec 65	*	2100
York Est. 3-A, sec 1583	150	1410
Cable Oil Co., Webb 4, blk 5	10	700
Deep Oil Dev. Co.-Linday Drl. Co., Wilson 5, lse 4-A	768	2218
B. D. Donnell et al, W. J. McMurtry 1	†	583
H. H. Fraser et al, R. Kinder 2, sec 68	10	998
W. B. Hamilton Pet. Co., Giddings 4	110	1159
W. L. Hawkins et al, W. R. Pace 4, blk 112	25	1202
Perkins-Cullum Oil Co., Falls 200, blk 40	*	1254
Texas Co., W. H. Taylor 2, sec 1	*	1870
BAYLOR COUNTY—		
Consolidated Oil Co., Portwood 9-R, sec 1579	600	1365
Portwood 10-R, sec 1579	*	1373
Portwood 1-S, sec 1280	45	1416
Consolidated-Pet. Producers Co., Portwood 27-D, sec 1587	300	1392
Ray & Staniforth, Portwood 23-C, sec 1574	650	1353
COOKE COUNTY—		
Bridwell Oil Co., J. R. Parkey 2	*	805
Merrick Drl. Co., J. Hess 6	150	873
Seitz-Comegys & Seitz, Inc., F. Felderhoff 1	120	727
Woodbine Oil Co., L. Rhomer 1	150	960
JACK COUNTY—		
J. W. Eddington et al, Katie Hoefle 1	*	584
Maer & Shira, J. W. Webb 1	*	700
MONTAGUE COUNTY—		
Arco Oil Co., R. W. Cunningham 8	37	947
Bourland & Gannon, Mrs. Loy 8	10	913
Gibson & Jennings, J. T. Haralson 1, blk 51	*	2572
Lesh & McCall, R. Cunningham 8-B	40	952
WICHITA COUNTY—		
Boardman Bros., J. L. Jackson 6-B, blk 15	*	1302
Wm. Clark et al, W. W. Overby 5	*	1787
Fisher-Gilliland & Gates, C. Birk 10	20	1302
Horwitz & Oldom, D. E. Hooks 6	40	1290
King Roy. Co., Waggoner Est. 6-J	125	1977
W. B. Omohundro et al, D. E. Hooks 9	*	1791
Panhandle Ref. Co., Mary P. Bishop 1	*	1782
H. L. Rugeley et al, Waggoner Est. 5, sec 148	75	1102
WILBARGER COUNTY—		
Golding & Cochran, Waggoner Est. 10-C, sec 31	320	2533
J. H. Howell et al, Fannie Bond 1, sec 29	*	630
Maro Oil Co., Waggoner 1-H, sec 4	*	2387
YOUNG COUNTY—		
Bell O&G Co., B. R. Jeske 1, sec 239	*	1101
Fresno Oil Co., J. M. Kirkland 9, sec 2250	*	704
W. F. Hamilton et al, Jeffery 3, sec 51	*	930
I. B. Persky et al, M. E. Burris 1, sec 1365	*	752
A. L. Robb et al, Andrews 2, sec 1399	*	934
Underwood & Campbell, R. Campbell 3-C, sec 3401	35	902
R. Campbell 4-C, sec 3401	35	901

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS PANHANDLE

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GRAY COUNTY—		
Empire, W. C. Archer 3-B	612	3230
Magnolia, Raymond Harrah 7	132	3245
Portland Prod. Co., A. G. McKay 1	¶81	3357
HUTCHINSON COUNTY—		
Dixon Creek O&R Co., Cockrell 5-K	394	3017
Internat'l Pet. Corp., T. Lewis-Badger 24	407	2967
Texas Co., T. D. Lewis 5	403	2978
J. W. Moore 3	248	3145
Texas Plains Oil Co.-Turman Oil Co., Canadian River 1	245	2731
MOORE COUNTY—		
Texoma Nat'l, J. T. Sneed 6-P	¶623¾	2812
WHEELER COUNTY—		
Bell O&G Co., Plummer-Conoco 3	15	2547
Corite Oil Co., Gregg 1	¶8-71	2110
B. Johnston & Sons, Gossett-Johnston 1	¶571½	1672
Smith Bros. Ref. Co.-Hanlon-Buchanan, Balew 1	¶5¼-165	2555

*Failures; †Junked; ¶Million cu. ft. gas.

HEARINGS DELAYED

Austin.—Plans for hearing before the House Hot Oil Investigating Committee were disrupted last week when Frank W. Bennett, Dallas oil operator, failed to appear.

Representative Augustine Celaya had planned hearing to be resumed last Thursday with Bennett as the witness before the committee. On the morning that the meetings were to begin Bennett's attorney called Celaya and advised him that his client was ill in a Dallas hospital and would be unable to attend.

WEST CENTRAL TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
SHACKELFORD COUNTY—		
Roeser-Pendleton-Conoco, Cook 63-A, sec 61	40	1273
Cook 64-A, sec 61	*	1540
Cook 65-A, sec 61	45	1240

*Failures; †Junked; ¶Million cu. ft. gas.

Plymouth Extended

FIELD ENLARGED SLIGHTLY IN SEVERAL DIRECTIONS

WEEKLY STAFF REPORT

San Antonio.—Plymouth field of San Patricio County was extended slightly in several directions during the week through completions or showings of wells on drill stem tests.

Sun Oil Company's first operation in the area apparently has met with success. It is J. M. Hunt 1, Section 34, Taft Farms subdivision, on the southeast side of the field. The well cored sand at 5600-10 feet and shale at 5610-11 feet, total depth. Casing was set at 5600 feet and preparations are being made to drill plugs. The success of this well will call for several more by Sun Oil Company.

Plymouth Oil Company, holder of the lion's share of potential producing acreage, is the leader in drilling operations. Welder 15-C, Section 48, made four barrels per hour through 9/64-inch choke from 5624 feet, production from perforations slightly above this level. It shows a heavy gas pressure, casing registering 1700 pounds and tubing 2050 pounds. Welder 16-C, Section 48, perforated casing between 5631-34 feet and is completing. The well previously set casing at 5618 feet, but developed to high gas/oil ratio, hence a short string of pipe was set and perforated. Welder 17-C, on north line of Section 49, and northermost well in the field, failed to make a satisfactory producer at 5518 feet, and after deepening to 5653 feet showed 600 feet of oil, 35 pounds pressure on a 12-minute drill stem test. A four-inch string was set to total depth for completion. Welder 18-C in Section 48, is coring for the 5600-foot sand. Welder 19-C, Section 48, is rigging up. Other locations will follow in order.

Heep Oil Corporation's Welder 3-F, Section 46, apparently is a producer, coring saturated sand at 5632-40 feet. Drill stem test is being made. Welder 4-F, same section, is drilling below 3020 feet. Welder 5-F, a recent completion at 5645 feet, is an average producer.

Magnolia Petroleum Company is drilling on its Corpus Christi Bank and Trust Company 3, most southerly well in the district. It was making hole below 4013 feet at last reports.

Between the main field and the Magnolia extension, Conroe Drilling Company set a string of casing to total depth of 5613 feet in E. H. Welder 1-G, and casing has been perforated at 5607-12 feet. It is being completed. Benedum and Trees' Mrs. E. H. Welder 1, Section 34, west of the field, is in hard sand at 4153 feet and drilling ahead.

New Nueces Field

Lajita Corporation's Richard King Estate 1, northwestern Nueces County, on October 25, was flowing considerable fluid, 30 percent of which was oil, under good pressure, to open a new field. The well is located about three miles north and a little west of the town of Agua Dulce, and is in the King Ranch gas area.

The well drilled to 6008 feet, ran an electric formation tester, which showed possibilities of production on upper sands. Gun perforation of the casing at 5046-60 feet netted the flow. No gauge will be available on the well until it is clean, but it looks like a good producer. Elevation is 140 feet derrick floor.

This field opener, producing from the Frio, is in the center of SE SW Section 22, Richard King estate, 1320 feet north and the same distance east of the discovery gas well of the field, producing at a shallower depth. It is one half mile east of Jim Wells County.

Nueces County

Shell Petroleum Corporation's Ed F. Flato 1, deep test in the Saxet field of Nueces County, reached a depth of 7060 feet and has been plugged back to 4611 feet, at which level casing is being set. It will be gun perforated opposite a sand just above this level to be completed as a gas well. The test was a rather interesting one in that it was cored the greater part of the depth. It brought to light the great number of thin sand breaks in the section, some of which may ultimately be worked out into production.

Several good producers were completed in the Saxet field during the week. The best was Republic Natural Gas Company's John Dunn 10, which made an estimated 20 barrels per hour through ¼-inch choke from sand at 4842-47 feet. Initial flow was not reported on Houston Oil Company and Southern Minerals Corporation's W. W. Walton 2-B, which found the producing sand at 4863-69 feet. Several other rigs are running in the field.

Hard luck has delayed completion of Gilcrease Oil Company's W. W. Sanders 1, in the Baldwin field of Nueces County. Mud from around the casing has been pulled into the hole and a recementing job is likely. The well started off as one of the best producers in the field from sand at 4046-51 feet, but choked off due to the mud.

Refugio Has Producers

Good producers were reported in two fields of Refugio County. Humble Oil & Refining Company's Fannie Heard 12, in the Greta field, flowed 531 barrels in 24 hours through ¼-inch choke from 4394 feet. Quintana Petroleum Corporation's Tom O'Connor 20-A, in the Tomoconnor field, gauged nearly 60 barrels per hour through ¼-inch choke from total depth of 5908 feet. The well is flowing under a working pressure of 900 pounds.

Aside from an active rig by the Quintana Petroleum Corporation in the Tomoconnor field, Edwin M. Jones is drilling below 4600 feet in J. M. O'Brien 11-A, deep test in the Greta field.

Hidalgo Discouragements

Discouraging results have been obtained from several key wells in the Hidalgo County sector of the Rio Grande Valley. Further testing, however, is underway.

Union Sulphur Company's American Rio Grande Land & Irrigation Company 5, northwest offset to the discovery well of the Mercedes field, flowed about three barrels of fluid per hour, about one half 51 gravity oil and the rest salt water and mud. The well has been perforated in several spots between 7479-7501 feet, total depth 7529 feet. It is showing a pressure of about 1500 pounds. Well No. 6, 4500 feet northeast of production, is making rapid progress below 5650 feet.

About 2000 feet north of the east end of the producing area of the Samfordyce field, Hidalgo County, Mundy and Stevens' F. B. Guerra 1, Tract 12, Porcion 41, has failed to develop production after considerable washing with oil and other practices. It has a total depth of 3030 feet with sand at 2937-51 feet. It may be plugged back to the regular Samfordyce sand and casing gun perforated.

Across the Hidalgo County line into Starr County, H. J. Porter et al's Garcia Land and Cattle Company 1-B, located about 1400 feet north of the west end of production, is recementing. It gun perforated at 2786-90 feet, but made salt water. The well logged sand at 2785-93 feet and is bottomed at 2817 feet in shale. The salt water may be coming from a bad cement job.

Another Hidalgo County wildcat holding considerable interest is S. J. Sloan et al's Brock and Showers 1, Lot 9, Block 16, Porcion 80, west of Mission. Drilling to a total depth of 6003 feet, an electric formation test indicated gas sand at 4655-71 feet and oil sand 4671-94 feet, corrected depth. Casing was set at 4715 feet and tests are now being made.

Irwin et al's Starr County Cattle Company 1, Block 55, Porcion 89, in the Barbacoas area of Starr County, is in a gas sand at 2448-67 feet, where it is showing for a possible producer. The well originally was drilled to a total depth of 2817 feet by A. Nix and associates. It was taken over by the present operators, plugged back to 1853 feet and sidetracked. It developed salt water in sand at 2312-20 feet and was carried ahead.

Sioux Oil Company and Heard's Goodrich 4, in the southwestern portion of the Rio Grande City field, Starr County, tested salt water in sand at 1330-39 feet and has been abandoned. W. W. Zimmerman is coring for the sand in Doyno 3, north end of the field.

PLACEDO FIELD

San Antonio.—Two new producers were in the making late in the week in Placedo field of Victoria County. Barnsdall Oil Company and Felmont Oil Corporation's W. R. Smith 1, south of production, was in sand at 4773-78 feet, while Sun Oil Company's J. J. Marek 2 was completing at 4766-73 feet.

LOPEZ EXTENSION

Well two miles south is flowing 10 barrels hour

San Antonio.—C. H. Lewis et al's E. Lopez 1, two miles south of the Lopez field, Webb County, was flowing by heads late in the week from Mirando sand at 2251-60 feet, providing an important extension to this important new Mirando district field. The estimated flow was 10 barrels per hour through ½-inch choke with casing pressure built up 275 pounds. The well had swabbed previously at the rate of 15 barrels per hour, fluid level standing at about 1650 feet. This new producer is 990 feet from the west line and 330 feet from the north line of Section 110.

The Lewis well had increased its flow to 25 barrels per hour through ½-inch choke late in the week as pressure built up. Its closed in casing pressure was registered at 310 pounds.

The completion of a commercial producer in this well leads to considerable new development along this trend. The structure worked out already is rather massive and the extent of the producing area likely will depend largely upon sand conditions. If the sand continues to extend in a blanket, as is indicated by this extension, this field may develop into one of the largest in the entire Mirando group.

Cole field, several miles to the south and still in Webb County, continues its active development campaign. Magnolia Petroleum Company was completing two producers at the close of the week. J. Benavides 2, Block 292, was in sand at 2802-16 feet with casing set at 2800 feet. It was cleaning, but no gauge reported. Brennan Benavides 16, Block 286, also in this field, was showing considerable oil at 2727-51 feet. The Texas Company's M. W. Brennan Benavides 3, Block 325, flowed 10 barrels per hour at 2768-90 feet.

Second Mauritz Well

Second well in the new Mauritz field of eastern Jackson County was drilling near the sand late in the week. Smith and McDonald's Mauritz Brothers 1, southwest corner of the lease in Morris and Cummings survey No. 17, ½ mile northeast of production was making hole below 5500 feet, within 150 feet of the expected producing horizon. It was running about 35 feet lower than the discovery well. From an elevation of 82 feet, derrick floor, it topped the Discorbis at 4744 feet, Heterostegina 5072 feet, Marginulina 5205 feet.

Shell Petroleum Corporation, discoverer of the field, is drilling Mauritz Brothers 1-A, A. Kounze survey, ½ mile northwest of the discovery, below 3300 feet. T. P. Coal and Oil Company and Venza Oil Company's Roseborough 1, Section 33, ½ mile south of production is drilling at a shallow depth.

Shell Pipe Line Company is building a four-inch line from the Mauritz field to its Clemville pump station in northwest Matagorda County, a distance of 16 miles.

Big Hords Creek Well

Brown and Wheeler's Kauffman 1-C, second producer in the Conroe sand in the Hords Creek field of Goliad County, is of large proportions suggesting that this new district may come in for a heavy play. The well's first 15 hour gauge was 128 barrels through a variable choke, cut to below ⅛ inch. The flow was pure pipe line oil. Pressures registered at 1100 pounds on tubing and 1900 pounds on casing.

The well cored a heavy section of sand, the first being 4530-46 feet, then shale at 4546-58 feet and oil sand at 4558-66 feet, the well stopping in sand at that level. The well is 330 feet from the northeast line and 990 feet from the northwest line of Block 14, G. Southerland survey, a direct southwest offset to the discovery Conroe sand producer.

Keystone Royalties Company's C. B. Wood 2, 330 feet southeast of the first test, is drilling plugs after setting casing atop sand at 5976-85 feet. It leads the way to a new Hockleyensis producing area.

McNeill Producers

Revival of interest is evidenced in the McNeill field of Live Oak County, where one Pettus sand and several Hockleyensis sand producers have been completed.

Trinity Drillers and associates have moved in materials for P. E. McNeill 1, in the north corner of Block 10, Jane Curry survey, just west of the several producing wells. Several locations south of this well, Lion Oil & Refining Company's Dick Dobie 1 is shut down for repairs at 5708 feet, and likely will be carried considerably deeper. The well showed approximately 2200 feet of salt water on drill stem test at 5530-35 feet, a Yegua sand.

DUVAL COUNTY

San Antonio.—Loma Novia and Seven Sisters fields, Duval County, shared nine new producers during the week, the former receiving six and the latter three. Routine developments with slight extensions to proven fields featured work in this county, where more than 40 rigs are busily developing a series of excellent producing sands in the Jackson formation between 1500 and 2900 feet.

These wells showed a combined initial flow of 5818 barrels, or an average more than 242 barrels per well. They are drilled, completed and rig moved to another location on an average of 10 to 15 days, and in some cases in a lesser time.

ZAPATA COUNTY

San Antonio.—S. R. & C. Oil Corporation's Trevino 15-A, Section 66, Escobas field, Zapata County, plugged back from 2580 feet to 1285 feet and was completed for 50 barrels per day on pump. It tested several possible sands below the field's regular horizon. Rig has been moved to Trevino 16-A, same field. The Texas Company completed an average producer in Measles 77, C. Blanco survey, in sand at 1208-24 feet.

SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BASTROP COUNTY—		
Marts & Beavans, Scott 1, 1700 ft nwl, 5350 ft nel W. McLaughlin sur	*	2645
BEE COUNTY—		
Mills Bennett, Rapp 3, C. A. Dugat sur	*	4776
BEXAR COUNTY—		
Mid-Tex Prod. Co., Walker 1, 3100 ft nwl and nel of S. N. Dobie sur No. 79, in lot 21	*	2132
DUVAL COUNTY—		
Atlantic, J. F. Welder heirs 4, sw ne sec 385 (Seven Sisters)	650	2501
Bridwell Oil Co., M. C. Hubbard 5-B, sec 75 (Loma Novia)	150	2686
Dulce Oil Co., R. Serna Jr 3, sec 384 (Seven Sisters)	900	2490
Duval Oil Corp., C. W. Hahl 2, blk 6, sec 78 (Loma Novia)	750	2641
Highland Oil Co., Wm. Hubbard 2, ne se sec 75 (Loma Novia)	150	2580
Santa Clara Oil Co., R. C. Corbett 1, 690 ft nl, 1264 ft wl sec 92, GH &H Ry sur	*	5012
J. F. Welder Heirs 15, nw sec 385 (Seven S sters)	550	2488
Smith & Hamill, M. C. Hubbard 25, sec 77 (Loma Novia)	768	2676
Texas Co., C. W. Hahl 5, blk 8, sec sec 78 (Loma Novia)	750	2621
H. Wendt 9, sec 68 (Loma Novia)	1150	2650
GOLIAD COUNTY—		
Brown & Wheeler, J. R. Kauffman 1-C, Trevino sur (Hords Creek)	500	4566
Dirks Bros., G. A. Ray 1, 330 ft nl and el of 112-ac tr in B&B sur, Ab 421	*	4227
HIDALGO COUNTY—		
Ralph E. Fair, Inc., Seabury et al 1, Tr 256, por 38 (Samfordyce)	350	2767
Union Sulphur Co., A.R.G.L.&I. 5, lot 2082, blk 86, N. Capisallo dist. Llano Grande Gr (Mercedes)	75	7529
JIM HOGG COUNTY—		
Millet et al, Yeager 1, 530 ft nl, 150 ft el of blk 6, sec 20	*	3532
KARNES COUNTY—		
Dirks Bros, R. H. Belknap 1, 150 ft nel, 1609 ft sel of lease, Chas. Haynes sur	*	4005
Marts Pet. Corp., Cochran 1, 150 ft sl, 360 ft el of McConnell League.	*	Rig
LIVE OAK COUNTY—		
J. O. Whittington, Little 3, M. M. Shipp sur (N. McNeill)	*	5286
NUECES COUNTY—		
Magnolia, Baldw n 2, 330 ft sl and wl of BS&F sur No. 165 (Baldwin)	*	6610
Republic Nat. Gas Co., John Dunn 10, E. Villareal sur (Saxet)	600	4847
Richardson & Thomas, Page Bros 1, 330 ft nl and el of 50-ac, sh 2, Geo. Franks sub (Saxet)	*	5856
REFUGIO COUNTY—		
Humble, Fannie Heard 12, Ximinez sur (Greta)	531	4394
Quintana Pet. Corp., Tom O'Connor 20-A, Swisher sur No. 4 (Tomoconnor)	1400	5908
SAN PATRICIO COUNTY—		
Heep Oil Corp., E. H. Welder 5-F, sec 46 (Plymouth)	500	5645
Plymouth Oil Co., E. H. Welder 15-C, sec 48 (Plymouth)	350	5624
STARR COUNTY—		
C. R. Borah et al, A. Guerra 1, 330 ft nl, 150 ft el of 160-ac tr, sh 6, San Jose Gr.	*	3517
John Clopton, Roos & Bennett et al 2, 1900 ft w of el por 92, 3750 ft n State Highway 4	*	3005
Sioux & Heard, Goodrich 4, blk 5, tr 5 ,por 81 (Rio Grande City)	*	1339
WEBB COUNTY—		
C. H. Lewis et al, E. Lopez 1, 330 ft nl, 990 ft wl of sec 110, 2 mi s Lopez field	350	2260
J. P. Nash, S. Benavides 5, blk 159, Arispe Gr (Cole)	*	2865
Texas Co. M. W. Brennan 3, blk 325 (Cole)	*	2790
WILLIAMSON COUNTY—		
Fuch et al, O. R. Spreckles 1, 750 ft nwl, 3950 ft swl of J. Sapington sur	*	998
ZAPATA COUNTY—		
H. F. Crow, Yzaguirre 2, 492 ft swl, 330 ft nwl sh 17, por 15	*	415
Reliable Oil Co., A. D. Haynes 5, blk 4, Haynes sub, Comitas Gr (Comitas)	10	871
SR&C Oil Corp., Trevino 15-A, blk 8, sec 66 (Escobas) pb 1285 ft	50	2580
Texas Co., Measles 77, C. Blanco Gr (Escobas)	35	1224

*Failures; †Junked; ¶Million cu. ft. gas.

Extending Anahuac

TEST HALF MILE NORTHEAST CORES OIL AND GAS SAND

WEEKLY STAFF REPORT

Houston. — The Anahuac field was being extended over a half mile northeast October 25, when Humble Oil & Refining Company's Engles 6 cored oil and gas sand from 6850 to 7080 feet. Seven-inch casing was set around 7000 feet. The well topped Discorbis at 5822 feet, Heterostegina at 6242 feet and Marginulina at 6493 feet.

The extension test is located 1474 feet east of the west line and 466 feet north of the south line of H. & T. C. Survey, Section 50. It is over a half mile northeast of Engles 1.

Humble Oil & Refining Company's Clark 5 was completed at 7083 feet. Oil sand was found at 7040 feet and seven-inch casing was set at 7041 feet. The well came in for 18 barrels per hour through a quarter-inch choke. Tubing pressure was 700 pounds; casing 850 pounds. The oil tested 33.7 gravity. This well is located a half mile north and west of Clark 3, which was a dry hole, and extended the south Anahuac area that distance. Clark 5 topped Discorbis at 5915 feet, Heterostegina at 6275 and Marginulina at 7041 feet.

The same operator's Broussard 5, 2212 feet east of the west line and 466 feet south of the north line of the H. & T. C. Survey, Section 63, was being completed at the close of the week. The hole was drilled to 7085 feet, with top of the sand encountered at 6941 feet. Seven-inch casing was set at 7030 feet. Screen was set and the well was being washed in October 25. The test topped Discorbis at 5882 feet, Heterostegina at 6189 feet and Marginulina at 6578 feet. Humble Oil & Refining Company's Hebert Broussard 1, 466 feet out of the northwest corner of 640-acre tract in H. & T. C. Survey, Section 58 and 932 feet south of Engles 1, was drilling in oil sand at 7082 feet.

Humble Oil & Refining Company has made locations for five new wells in the Anahuac field. J. E. Broussard 6 is in the H. & T. C. Survey, Section 53, being 3085 feet east of the west line and 466 feet south of the north line or 877 feet east of Broussard 5. Clark 7 is in the H. & T. C. Survey, Section 57 and 1205 feet south of the north line and 466 feet east of the west line of the survey. Humble Oil & Refining Company and Rycade Oil Corporation's Engles 2 is located 850 feet north of Engles 1 in the H. & T. C. Survey, Section 50. Middleton 10, is 466 feet south of the north line and 466 feet east of the west line of H.&T.C. Survey, Section 58. Zappe 1 is 466 feet out of the southeast corner of H. & T. C. Survey, Section 51 or a north offset to Middleton 10.

Ten miles south of the Anahuac field in the Jackson Lake or Double Bayou area, Black Gold Petroleum Company has made location for Barrow 1, 6433 feet northwest of the southeast line and 3080 feet southwest of the northeast line of the R. Barrow Survey, Abstract 35. This area has been the scene of an extensive leasing campaign with several major companies participating. Humble Oil & Refining Company and Pure Oil Company have worked in the area with geophysics. One test in the Roberts Survey, by Mills & Jones Gau 1, in the northeast corner of the Roberts Survey, was drilled to 5626 feet in November, 1933.

TEXAS GULF COAST

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARBERS HILL—		
McAlbert Oil Co., Higgins 2-A, (wo)	500	6005
Mills Bennett, Wilburn A-5	140	5350
Sinclair-Prairie, Wilburn 18, (wo)	520	5500
Sun, Wilburn 18, (wo)	420	5506
CONROE—		
Humble, South Tex. Dev. Co. A-78	936	5061
HANKAMER—		
Eljean Oil Co., Thomas 1	*	lcn.
Gulf, Boyt 4, (wo)	647	3801
Boyt 23	200	2675
W. C. Hall, Ainsworth 1	*	lcn.
Will Strozer, Ezell 1	*	lcn.
HASTINGS—		
Stanolind, Drake 3	615	5830
Williams 3	435	6106
HIGH ISLAND—		
Stanolind, Taylor A-3	320	5050
HULL—		
Baggett, Bowen and Hunter, Baggett 3	8	410
Baggett 4	10	455
HUMBLE—		
Sun, River 90	*	1458
E. M. Wilson Oil Co., House 6	200	3000
LIVINGSTON—		
Gem Oil Co., Davis Holmes 7, (wo)	419	4332
Kavanaugh and Collins 2	264	4228
MANVEL—		
Texas Co., Cooper 1	*	5956
MYKAWA—		
West Production Co., Platt 5	432	4456
PIERCE JUNCTION—		
Rio Bravo Oil Co., Settagast 16 (wo)	*	4393
RACCOON BEND—		
Humble, E. Washington 1-B, (wo)	218	4144
SOUTH LIBERTY—		
Gainer Oil Co., Harrison 2	35	888
Sun, Mitchell 56	40	1029
THOMPSON—		
Gulf, Booth 2	*	8539
TOMBALL—		
Humble, Michel 2-B	102	5580
ANGELINA COUNTY—		
P. W. Henderson, Weeks 1, se of Lufkin, H. Hayman sur	*	2492
Regal Oil Co., Harrison 1	*	836
LIBERTY COUNTY—		
D. H. Furse, Kover 1, n of Dayton field, A. Walkers sur	*	lcn.

*Failures; †Junked; ¶Million cu. ft. gas.

Cockburn Oil Corporation's Houston Ship Channel 1, Battle Ground prospect, A. McCormick Survey, Harris County, was drilling ahead at 3695 feet at the close of the week after having had a showing of oil in the Miocene formation from 3419 to 3424 feet. The well is located approximately one mile southwest of T. S. & F. Oil Company's Hines 1, which made a small volume of gas in this same formation. The wildcat will be drilled on down to 6000 feet to test the lower formation.

Dickinson Field

Humble Oil & Refining Company's Anderson 1, J. Sellers Survey, Dickinson field, Galveston County, was drilling ahead below 9121 feet at the end of the week after drilling in oil sand at 9100 feet. Top of the sand was found at 9000 feet. This well is a north offset to Humble Oil & Refining Company's Danielson 1, which was completed at 9140 feet for the deepest commercial producer in the Texas Gulf Coast. Anderson 1, is running approximately 100 feet lower than the Danielson 1. Anderson 1 topped the Discorbis at 6630 feet, Heterostegina at 6670 feet and the Marginulina at 6868 feet. Anderson 1 will be carried down to test the Danielson sand.

In the same field, Humble Oil & Refining Company's Maco Stewart A-6, the furthest south well in the field, J. Sellers Survey, was drilling at 8456 feet after taking a drill stem test from 8236 to 8336 feet. The test was made through a quarter-inch choke and in 17 minutes, the operators received nine thribbles of mud. This test topped the Discorbis at 6670 feet, Heterostegina at 7120 feet, Marginulina at 7151 feet and the Frio formation at 8043 feet.

Extend Conroe Field

The Conroe field, Montgomery County, was extended 1000 feet northwest during the past week when Humble Oil & Refining Company completed its South Texas Development Company A-78 for 39 barrels per hour from 5061 feet. The well is located in the T. Slade Survey and is northwest of South Texas Development Company A-75.

On the Dacus prospect in Montgomery County, Thompson et al's J. B. Scott 1, F. Wheeler Survey, was shut down waiting on casing at 3665 feet at the end of the week. It is claimed that showings of oil were found from 2425 to 2471 feet and 3240 to 3271 feet. On an electrical logging device sands were found from 2425 to 2440 feet; 2460 to 2470 feet; in the Hockleyensis formation. Sands in the Cockfield formation were found from 3240 to 3271 feet. Salt water sands were from 3305 to 3500 feet and from 3608 to 3661 feet. The electrical logging device showed around 12 ohms in the Hockleyensis and in the Cockfield sand 11 ohms.

Sun Oil Company's Hebert Broussard 1, LaBelle prospect, B. Blackmon Survey, Jefferson County, flowed 45 barrels of salt water per hour through a quarter-inch choke with a casing pressure of 2000 pounds; tubing pressure 650 pounds. The well showed no oil. The operators will let the well flow for a few days and then will kill it and drill deeper. Nine and five eighths-inch casing was set at 8210

feet and the bottom of the hole is 8285 feet.

The second and third producer was completed in the 400-foot sand in the Hull field, Liberty County. Baggett, Bowen & Hunter completed Baggett 3 from 410 feet for an eight barrel pumper. Baggett 4 was completed at 455 feet for 10 barrels per day on the pump. It is not known whether this 400-foot sand is a new producing sand in the field or if it is from seepage.

WILDCATS WATCHED

Two Wharton County tests are center of interest

Houston.—Two of the more important wildcats drilling in the Texas Gulf Coast are The Texas Company's Pierce C-1 on the Five Corners prospect and Pure Oil Company's E. Paige 1 on the Blue Basin prospect in Wharton County. The two wildcats are not over three miles apart and are holding the attention of the Texas Gulf Coast operators.

The Texas Company's Pierce C-1, J. Caldwell Survey, was drilling ahead below 5672 feet at the end of the week, after having sand and shale showing oil from 5546 to 5576 feet. The well is now 500 feet in the Marginulina formation and should pick up the Frio formation in the next few hundred feet. This well is running around 300 feet higher than Pure Oil Company's E. Paige 1, which is located only three miles southwest.

Pure Oil Company's E. Paige 1, J. Pirie Survey, was preparing to make a drill stem test from 5760 to 5851 feet, October 25, and were reaming down to make a seat for the testing tool. Sands from 5760 to 5764 feet had a showing of oil and gas. From 5764 to 5851 feet, the bottom of the hole, sands carried salt water. From 5831 to 5851 feet was fine hard sand. The operators will carry the well down to the Frio formation and test this formation.

On the East Bernard prospect, in the J. Scott Survey, Wharton County, Sterling Oil & Refining Company's Janek 1 swabbed mud, gas and salt water during the past week at 7840 feet.

On the west flank of Sheppards Mott dome in Matagorda County, H. M. Smith Corporation's Wadsworth Estate 1, S. R. Fisher Survey, was setting screen for a production test at 8842 feet. The well has had several showings of oil below 8700 feet.

Van Vleck Field

In the Van Vleck or Bay City field, Matagorda County, Skelly Oil Company's Cobb B-3, M. Cummings Survey, 2235 feet northeast of the discovery well, was running a special temperature recorder to find out where the salt water is coming from. The device is an arrangement to take the temperature of the oil and salt water and in this way determine where the water is located, which will furnish the operators with information as to where to set the casing. The well is making approximately 20 barrels per hour showing 25 percent salt water through a

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Lv. Houston	9:20 A.M.	November 8
Lv. San Antonio	3:00 P.M.	November 8
Ar. El Paso	7:15 A.M. CT	November 9
Lv. El Paso	7:30 A.M. MT	November 9
Ar. Los Angeles	8:00 A.M.	November 10

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quarter-inch choke from 8224 to 8227½ feet, a new sand for the field.

The same operator's discovery well, Cobb B-1, was taking a series of drill stem tests at 7460 to 7495 feet to determine the source of salt water in this new sand. The well flows oil and salt water through a quarter inch choke. It is believed that the salt water is coming from the last five feet of sand. The top of the sand in this well was found at 7461 feet.

Good Hastings Well

Stanolind Oil & Gas Company's Drake 3, in the Hastings field, Brazoria County, was completed October 25 for one of the best wells in the field and is one of the highest wells so far drilled. The hole was drilled to 5830 feet and seven-inch casing set at 5632 feet. Oil sand was topped at 5632 feet. The well came in for 615 barrels per day through a quarter-inch choke with 755 pounds on the tubing and 725 pounds on the casing. The well topped the Discorbis at 4800 feet, Heterostegina at 5220 feet and the Marginulina formation at 5370 feet.

The same operator's H. G. Williams 3, A. C. H. & B Survey, No. 1, was completed at 6105 feet after setting seven-inch casing at 6093 feet. The well came in for 166 barrels in nine hours through a quarter-inch choke. Tubing pressure was 700 pounds; casing 675 pounds. This test topped the Discorbis at 5270 feet, Heterostegina at 5680 feet and the Marginulina at 5750 feet.

Stanolind Oil & Gas Company's Kidd 2, A. C. H. & B. Survey No. 2, was swabbing at the close of the week. The hole was drilled to 6115 feet and seven-inch casing set at 6084 feet. The well topped Discorbis at 5236 feet, Heterostegina at 5542 feet, and Marginulina at 5602 feet. Same operator's Miller 2, A. C.H.&B. Survey, No. 2, was waiting on cement to set at 6001 feet where seven inch casing was set. The bottom of the hole is at 6089 feet.

In Ft. Bend County, Gulf Production Company and Humble Oil & Refining Company abandoned Booth 2, 764 feet west of Booth 1, Thompson field, H. Crisman Survey, at 8539 feet after sticking a drill stem on bottom. This well was the deepest test drilling in the Thompson field. Sand was found from 7068 to 7078 feet and 7124 to 7134 feet. The sands did not carry any showings of oil.

30 COMPLETIONS

Houston.—Completions along the Texas Gulf Coast the past week included a number of work over wells and also a number of abandoned locations. There were 30 completions of which 20 were producing wells with an initial production of 6461 barrels. There were 10 failures, including several abandoned locations.

Austin.—A bill providing for a five percent tax on oil well cementing jobs has been introduced in the Texas Legislature by Representative Jesse Roach of Hunt.

Discover New Sand

ENGLISH BAYOU HAS A NEW ZONE; DARROW EXTENDED

Houston.—The English Bayou field of Calcasieu Parish evidently has a new producing sand, as Union Sulphur Company's Castle 3, Section 14-9s-8w, on the northwest edge, has cored an oil sand from 5156-80 feet. A production test will be made immediately. If commercially productive it will be the shallowest sand yet developed in the English Bayou or neighboring Gillis field. Castle 3 was drilled to 8580 feet, plugged back to 7316 feet, redrilled to 7420 feet, plugged back to 4565 feet and whipstocked out and drilled to its present bottom. The well is but 1000 feet northwest of Fohs Oil Company's Castle 2. Heretofore, Fohs Oil Company has been the sole producer in the English Bayou pool.

Union Sulphur Company's State 12, in the Gillis field, was preparing to reset casing at 7569 feet in a new sand discovered the previous week. When a test was started of the sand, found from 7654-59 feet, the well blew out and was estimated making 12,000,000 cubic feet of gas daily. The well was killed to be reworked.

Fohs Oil Company's Castle 7, Section 13-9s-8w, west offset to Wasey 1, was drilling plugs after setting casing at 7024 feet. The bottom of the hole is 7064 feet. A gas sand was found from 6982 to 7009 feet, and another from 7013 to 7024 feet. The oil and gas sand was found from 7024 to 7061 feet.

Union Sulphur Company has made location for State 15 in the Gillis field. It is 225 feet south and 164 feet west of the NEc NW NW Section 12-9s-8w. State 16 is located 1110 feet north and 1443 feet west of the SEc NE Section 11-9s-8w. The Texas Company has made location for Nickerson Fee 7. It is 200 feet east and 148 feet north of the SWc NW NW Section 12-9s-8w.

Extend Darrow Dome

At Darrow Dome in Ascension Parish, Humble Oil & Refining Company's Community 6 extended the field to the east when completed for 407 barrels per day from 5686 feet. The well was completed through a ¼-inch choke and had a tubing pressure of 700 pounds and casing pressure 800 pounds. The well was completed over 150 feet lower than Community 5, which is producing from a new sand for the field. It is reported Humble Oil & Refining Company's Community 5 started making 50 percent salt water the past week.

Community 6 is located 1910 feet from the NEc of Section 31 along the northeast line and 357 feet southwest at right angles to the northeast line of Section 31-10s-2e.

Humble Oil & Refining Company's Gumble 4, Section 33-10s-2e, drilled into salt October 25, 1935, at 6049 feet. Top of the salt was found at 6023 feet. The well had a good showing of oil at 5996 feet with the top of the oil sand at 5990 feet. This is the deepest oil sand that has been found in the field. It is probable that the well will be plugged back to test this sand.

Humble Oil & Refining Company has made location for Community 8. It is located 1985 feet northwesterly along section line from northeast corner of Section 31, thence 853 feet southwesterly at right angles in Section 31-10s-2e.

Tepetate Active

Three wells in the Tepetate field, Acadia Parish, are preparing for a production test. The three wells are in different directions from the discovery well, and would extend the field in each direction. Two of the three wells have found new sands below the regular producing horizon for the field.

Continental Oil Company's Homeseekers Development Company 1, Section 29-7s-2w, 4250 feet west and a little south of the discovery well, was preparing to make a drill stem test from 8518 to 8531 feet. The casing was perforated with 50 shots. Total depth is 8801 feet, and it encountered several oil sands but was plugged back to 8500 feet, where seven-inch casing was set. This well is testing sands 200 feet lower than the discovery well and is in the Frio formation.

The same operator's Klump 1, Section 34-8s-2w, three quarters of a mile southwest of the discovery well, was waiting on cement to set at 8375 feet, after plugging back from 8442 feet. A drill stem test from 8334 to 8360 feet showed only gas and mud. The casing will be perforated again, and another test will be made. The well was car-

SOUTH LOUISIANA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BOSCO—		
Superior, Prejean 1 (wo)	100	8580
DARROW DOME—		
Humble, Community 6	407	5686
EAST HACKBERRY—		
Stanolind, Gulf Land 14	947	5797
JENNINGS—		
Ratcliffe Oil Co., Keaughen 1, (wo)	30	1936
Port City Oil Co., Haywood Jennings 16	145	2075
LAKE BARRE—		
Texas Co., St. Lake Barre 35	1650	3781
LEESVILLE—		
Coastal Oil Co., Constantine 2	*	lcn.
Gulf, Allen Land 1, (wo)	340	3846
ROANOKE—		
Humble, Thomas 1	*10,583	
PORT BARRE—		
Gulf, Wilson Cochrane 13	*	3973
SULPHUR—		
Union Sulphur, Fee 813	900	5309
WEST HACKBERRY—		
Remac Oil Co., Vincent Heirs 1	*	3300

*Failures; †Junked; ¶Million cu. ft. gas.

ried to 9000 feet and encountered several sands. Top of the Frio sand was found around 8318 feet. The sand measured 26 feet lower than the discovery well. However it is thought when the hole is corrected the well will be higher than the discovery. This well is the deepest test yet drilled in the field and was an exploratory test for the deep sands and found the water level around 9000 feet. It is expected that when completed the well will be much larger than the discovery well.

Continental Oil Company's Welsh 1, Section 28-7s-2w, 2500 feet north of the discovery well, was drilling cement plug at 8317 feet at the end of the week. This test found a sand at 7700 feet that tested at the rate of 2000 barrels of oil but it showed salt water and was deepened to the Ortego sand. The well is running about 70 feet higher than the discovery well.

Several have predicted that the new Tepetate field will be one of the most prolific and the largest field in the Louisiana Gulf Coast. Continental Oil Company is the largest lease holder in the area and after the three new wells are completed will start an extensive drilling campaign to develop the field.

It is reported Superior Oil Producing Company is moving machinery out from Duplantier 1, in East Baton Rouge, which was abandoned at 10,360 feet, and is moving it to Bayou Mallet prospect in Acadia Parish. This prospect is north of the Churchpoint prospect, where Woodley Petroleum Company and Superior Oil Producing Company drilled two dry holes. The operators have since rechecked the area with reflection seismograph.

NEW IBERIA SAND

Lake Charles.—The New Iberia field, Iberia Parish, has taken on new life since completion of The Texas Company's Henzen 1-B, to discover a new sand for the field and with the showing of oil in Harrison & Abercrombie's Schwing 4 at even a greater depth.

Harrison & Abercrombie's Schwing 4, north flank test, hit a new deep sand for the field from 6754 to 6784 feet. Seven-inch casing was set at 6764 feet and during the past week it swabbed 20.3 gravity oil. However, the sands did not show oil in commercial quantities so the well is being deepened.

The Texas Company's Hanzen 1-B was completed recently in sands from 5385 to 5401 feet to discover the third sand in the field. The well came in for 80 barrels per hour through small size chokes and is considered one of the best wells in the field.

The second producing sand for the field was found in Helis Oil Company's Bernard 3 when the well came in for 200 barrels per day from 4737 feet after topping an oil sand at 4650 feet.

Y. D. Spell's Bernard 1, located between four dry holes, was the discovery well for a new deep sand at 3828 feet and was the forerunner for drilling of the other new deep sands in the field. The well was drilled to 3828 feet and came in for 720 barrels per day on July 4, 1934.

240 Barrels Hour

BEST COMPLETION AT RODESSA; NO FAILURE YET IN FIELD

WEEKLY STAFF REPORT

Shreveport.—Rodessa added its eleventh oil well in the oolitic lime of the Glen Rose last week, with not a failure recorded since oil was found in the field, although several wells high on the structure have been completed as gassers.

The field's tenth and eleventh oil wells were both completed last week by Haynes Production Company, which completed the second oil well in Rodessa, having acquired a large amount of acreage east of the gas field just before oil was found. W. B. Lawton 2, SE NW SW 14-23n-16w, believed to be the largest well yet completed in the field in potential, as it flowed 240 barrels per hour on 1¾-inch choke on tubing, with tubing pressure of 300 pounds and casing pressure of 1200 pounds. Seven-inch casing in this well had been cemented at 5828 feet. Top of saturated lime was logged at 5922 feet and the well showed for a small producer in the Gloyd sand the intermediate or second gas producing horizon of the field. Total depth is 6005 feet; elevation is 236 feet.

The other new well is Haynes Production Company's Sexton 1, C Section 14-23n-16w, completed flowing 160 barrels of oil per hour through three eighths-inch choke on tubing from 6031 feet. Five and three quarter-inch casing had been cemented at 6001 feet.

Another well at Rodessa that was scheduled for a test during the week-end is United Gas Public Service Company's Rodessa Oil & Land Company 2, NE NE 22-23n-16w, just northwest of the Rodessa townsite. This well took in only 15 feet of saturated formation, going to 5986 feet; 5¾-inch casing had been cemented at 5313 feet. Anhydrite was logged from 5300 to 5551 feet.

Three outpost tests in the Rodessa area were holding a large amount of attention last week. One mile northwest of nearest oil production, Grady Vaughan Production Company's Comegy's 1, SE SE 10-23n-16w, logged anhydrite from 5095 to 5655 feet, and is coring below 5760 feet. The Gloyd sand will be tested in this well to determine whether it has dipped sufficiently in this direction to carry oil production.

One mile west of production, R. W. Norton's Foscue 1, NE SE 20-23n-16w, checked 24 feet lower on top of anhydrite as compared with the same operator's recently completed Levee Board 1, Section 21-23n-16w. Nine and five eighths-inch casing in Foscue 1 was cemented at 5147 feet. An outpost well to the northeast is R. W. Norton's Tyson 1, NW NW 13-23n-16w, logged top of anhydrite at 5056 feet and later was drilling below 5130 feet. It checks practically normal with Norton's Levee Board 1.

The first well in the Rodessa townsite to be drilled to the oolitic lime horizon below 6000 feet since discovery of oil and upon the result of which hinged the immediate beginning of more than a dozen locations, proved disappointing when tested last week. This well is Eastern Texas Production Company and D. C. Richardson's School Board 1, SWc Block 25, townsite, Section 23-23n-16w, which showed for a small gasser of four million to five million cubic feet daily at 6032 feet. It is on a two-acre tract leased from the Caddo Parish school board for $8000 a few days after oil was discovered at Ro-

Rodessa Drilling Report

Ark.-La. Gas Co.'s Rodessa O&L Co. 3, se se 22-23n-16w, dr 5942 ft lime and shale. Rodessa O&L Co. 4, nw ne 23-23n-16w, dr 2107 ft. chalk. Rodessa O&L Co. 5, sw ne 22-23n-16w, dk.

American Liberty Oil Co.'s Jno. B. Rogers 1, C. M. Robinson sur, rur. (Cass Co. Texas).

Bartex Pipeline Co.'s (Phillips Pet.), B. H. Norton Est. 1, cent se ne 18-23n-15w, rur (formerly carried Wilbanks 1 in sec 7); Sarah Bruner 1, ne se 10-23n-16w, rur.

Eastern Texas Prod. Co.'s & D. C. Richardson's Sch. Bd. 1, swc blk 25, 23-23n-16w, 5½ in csg 5960 ft, tested est 4 to 5 mil ft gas and so, arr perf csg and test again, td 6032 ft.

Danciger O&R Co.'s Willis Est. 1, lot 5, block 7, 23-23n-16w, rur.

Haynes Prod. Co.'s W. B. Lawton 3, nw se 14-23n-16w, spd wocs 12½ in csg 271 ft. H. Otwell 2, sw sw 14-23n-16w, dr 4901 ft red shale; Sexton 2, sec 14-23n-16w, spd, dr 3021 ft shale and streaks lime.

W. M. Layton's Tyson 1, se nw 22-23n-16w, wocs 278 ft.

Lion O&R Co.'s J. M. Wynn 1, ne sw 9-23n-15w, rur.

Monahan Oil Co.'s Comegys 1, 10-23n-16w, cemtd 9⅝-in csg 2220 ft; Comegys 2, 10-23n-16w, lcn.

McAlester Fuel Co.'s Noah Tyson Hrs. 1, se nw 22-23n-16w, wocs.

M. H. Marrs et al's Hunter 1, se nw sw 13-23n-16w, rur.

R. W. Norton's Caddo Levee Bd. 2, nw se 21-23n-16w, dr 2377 ft; Tyson 1, nw nw 13-23n-16w, top anhydrite 5056 ft, dr 5128 ft shale; Foscue 1, ne se 20-23n-16w, 9⅝ in csg cemtd 5147 ft.

Pelican Oil & Gasoline Co.'s Sexton Unit 2, sw se ne 14-23n-16w, cemtd 10¾ in csg 2100 ft; Sexton Unit 3, spd cemtd 16-in csg 326 ft.

United Gas Pub. Serv. Co.'s Rodessa O&L Co. 2, ne ne 22-23n-16w, 5¾ in csg 5313 ft, arr test after logging 15 ft sat lime, td 5986 ft (anhydrite 5300-5551 ft).; Ardis 1, se sw se 14-23n-16w, dr 2065 ft, gummy shale and lime; Poole 1, ne ne 21-23n-16w, dr 742 ft shale and bldrs.

United Prod. Co.'s Thurmond Unit 1, nec Jno. Coleman sur, (Cass County, Tex), wocs 2100 ft.

Grady Vaughan's Comegys 1, se se 10-23n-16w, anhydrite 5095-5655 ft, coring for Gloyd horizon 5760 ft. Hunter & Derryberry 1, sw ne nw 14-23n-16w, elev 246 ft, top anhydrite 5093 ft, sd for tools 5588 ft.

dessa. The well probably will have casing perforated in the Gloyd sand where it showed for a large gas well. Operators resorted to the use of air jammers in an effort to make the well flow but without success. Operators thought that all the gas having been cased off above was the cause of the well failing to develop pressure. Cores in the last 20 feet of the hole showed some oil saturation. Five and one half-inch casing had been cemented at 5960 feet.

In order to solve both the high gas-oil ratio problem which faces operators at Rodessa and that of salt water which has appeared in some of the wells in the east part of the field, some are suggesting that casing be cemented below the producing horizon and then perforated.

The United Gas Public Service Company's Rodessa Oil & Land Company 1, Section 15-23n-16w, drilled to 6041 feet to find the salt water level and did not find it later plugging back to 6002 feet, is reported to have logged saturated lime from sub-sea depth of 5754 to sub-sea depth of 5801 feet and then five feet of hard black sandy lime very salty before again going into saturated lime which continued for the next 18 feet. It now develops that under the last 18 feet of saturated lime there appeared nine feet of another very salty lime.

Outside of Rodessa, North Louisiana had little activity of interest last week.

LOUISIANA PERMITS

Shreveport.—Fifteen drilling permits were authorized last week by the minerals division, Louisiana Conservation Commission. Of this number seven were for North Louisiana divided among the following parishes: Bossier, one; Caddo, four, and Morehouse, two. The eight in South Louisiana were divided among the following parishes: Calcasieu, three; Cameron, two; Jefferson Davis, two, and St. Landry, one.

12 COMPLETIONS

Lake Charles.—There were 12 completions in the Louisiana Gulf Coast during the past week, eight of which made oil producers. The daily production from the producers was 4519 barrels. The remaining four completions were failures.

FLORIDA WELL

Miami, Fla.—Heavy shale or Argillaceous limestone section is now being drilled through at the South Lake Well, 12 miles south of Groveland. According to Wm. G. Blanchard, president of the Oil Development Company of Florida, which company is drilling this South Lake well for J. Ray Arnold and associates, the well has now reached a total depth of 2236 feet, and for the first time has passed out of the heavy lime section consisting of crystalized and uncrystalized and hard and soft limes and chalk, into a section in which clay or argillaceous material is becoming more prevalent. This "break" or change in type of formation was encountered at 2180 feet.

20 NEW STARTS

Cooper field gets extension eastward

NEW MEXICO WEEKLY STAFF REPORT

Hobbs.—Launching of operations on 20 new locations in Lea County within the past two weeks will involve the expenditure of more than $750,000 for labor, equipment and miscellaneous charges, as the cost of completed wells average close to $40,000 each. All drilling is awarded to rotary contractors. Thirteen of the new well projects were undertaken the past week. Except for a single wildcat, the new drilling is slated for the Cooper, Eunice, Hobbs and Monument fields. Continental Oil Company and The California Company, operating jointly, contributed six of the new tests gained by the Eunice field within the past two weeks, while The Texas Company, Gypsy Oil Company and Shell Petroleum Corporation each added three new tests within the period.

The Texas Company has started operations on J. M. Dean-Pure 1, C SE SW 28-22s-36e, a wildcat situated nearly two miles south by west of nearest oil production in the Eunice field. It is also about a half-mile southeast of Marland Oil Company et al's Bill Meyer 1, which passed up oil and gas showings in the 3700-foot lime zone in drilling to 4304 feet in November, 1930, then plugged back because of sulphur water to 3772 feet, where it produced 11,500,000 feet of gas. The hole was filled with mud and temporarily abandoned in January, 1931. The Texas Company obtained the Dean 160-acre tract from Pure Oil Company on an over-riding royalty basis, and holds lease on 320-acres adjoining to the south.

The Monument field, which has 13 active tests and an equal number of completed flowing wells, will have three new wells ready for completion during the current week. Sun Oil Company, Superior Oil Company and Barnsdall Oil Company have cemented seven-inch pipe on top of the oil saturated lime. Barnsdall Oil Company is trying for a three quarter-mile east extension for the south end of the field. Jeffers Oil Company's Britt-Conoco 1, C SE NW 7-20s-37e, about a half-mile southeast of the latter, was drilling below 3600 feet last week.

Width of the Cooper field was extended one location to the east when Humble Oil & Refining Company's S. W. Harrison 1, C SW SW 25-24s-36e, recorded a heavy flow of oil when formation tester was used in lime at 3354-3436 feet. The hole is bottomed at a sub-sea depth of 145 feet, and casing has been run to complete. A number of progressive offsets will follow its successful completion. Encouraged by the performance of this east flank test, Humble Oil & Refining Company has made location for Edna E. Hunter 1, C NW NW 24-24s-36e, situated in the original Cooper townsite area.

Preliminary production test given Skelly Oil Company's State 4-B, C NW NE 16-21s-36e, an east edge producer for the Eunice field, indicated four percent bs&w showing when the well swabbed and flowed an average of 90 barrels fluid per hour for six hours from lime at 3900 feet. It has a sub-sea depth of 309 feet.

Two wildcats seeking oil production from sandy-lime horizon to the east of the production trend in Lea County were placed on the doubtful list the past week. Phillips Petroleum Company and Pure Oil Company's Woolworth 1, Lease 2, C NE NW 33-24s-36e, about 3½ miles east of the Cooper field, failed to show for a producer in drilling to 3951 feet, or 1179 feet below the top of the brown lime section. Harry Leonard et al's C. W. Justis 1, SWc NW NW 20-25s-37e, near Jal townsite, developed a small amount of oil at 3397 feet, or 330 feet sub-sea, and was credited with 2000 feet of salt water in hole while drilling at 3475 feet.

S. K. Vierson et al's W. D. Robinson 1, C NW SE 14-11s-32e, northwest Lea County wildcat, was drilling in salt at 1900 feet. First anhydrite was encountered between 1325 and 1350 feet, while broken salt series were logged at 1570 feet, with an elevation of 4355 feet. No other tests have been drilled in the general area. A number of large companies purchased lease protection out of the drilling block on the strength of supporting geophysical data.

Hobbs, N. M.—Crude runs by pipe lines serving the 11 separate districts and fields in New Mexico during September amounted to 1,734,400 barrels, or a daily average of 57,813 barrels, according to compilation prepared by C. G. Staley, proration umpire for Lea County and deputy of the New Mexico Oil Conservation Commission. Lea County, the principal producing area for the state, accounted for near 94 percent of the runs. Proration quota for the state during September was limited to 60,000 barrels daily, while the allowable recommended by the United States Bureau of Mines for the period was 50,800 barrels daily.

MOUNTAIN STATES

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
GLACIER COUNTY (Cut Bank Field)—		
Montana Power Gas Co., Maltby 1, sec ne 8-33-6w	187	2840
Askins, Askins 1, lot 24, 12-33n-6w	*	2993
Watson-Kistner, Britton 1, ese se 14-34n-6w	130	2905
R. C. Tarrant, Yunck 2, nw 12-34n-6w	50	2794
TOOLE COUNTY (Kevin-Sunburst Field)—		
Potlatch O&R Co., Fee 7, nw nw se 21-34n-1w	¶1½	1295
WYOMING		
NIOBRARA COUNTY (Lance Creek Field)—		
Ohio Oil Co., Carrie Putnam 4, sw sw 33-36n-65w	2040	3996
NEW MEXICO		
LEA COUNTY (Cooper Field)—		
Skelly Oil Co., J. L. Coates 3, c sw sw 3-24s-36e	1000	3578
LEA COUNTY (Eunice Field)—		
Atlantic, State 1-H, C lot 15, sec 5-21s-36e	375	3910
Gypsy, State-Bell-Ramsey 5, c sw sw 4-21s-36e	670	3868
Humble, State 6-B, c ne ne 29-21s 36e	5000	3900
LEA COUNTY (Hobbs Field)—		
Gypsy, W. D. Grimes-North 2, swc se sw 21-18s-38e	¶18¾-12,286	4225

*Failures; †Junked; ¶Million cu. ft. gas.

Extend Lance Creek

1200 ACRES MAY BE ADDED TO FIELD BY NEW WELL

ROCKY MOUNTAIN FIELDS

WEEKLY STAFF REPORT

Casper.—Indications of an oil well completion which will add around 1200 acres to the Sundance area in the Lance Creek field, Niobrara County, eastern Wyoming, were seen in Huber Oil Company's Jose 1, C SE NE NW 6-35n-65w. The well cored saturated Sundance between 4024-42 feet and went to 4096 feet in the red beds.

The well is waiting on cement to set around 8⅝-inch casing at 3987 feet. Jose 1 is located three quarters of a mile west of the nearest Sundance production at Lance Creek and approximately on the 900-foot contour based on the Dakota sandstone. It is on the steep side of the structure and if completed as an oil well will bring in several hundred acres on the gentle east slope of the structure, as well as acreage in the vicinity of the well.

After cleaning itself and on final test through choke on the 2½-inch tubing Ohio Oil Company's Carrie Putnam 4, SW SW 33-36n-65w, flowed at the rate of 100 barrels an hour. The well started at 65 barrels an hour. The Sundance sand was logged at 3942-96 feet with hole bottomed at 4000 feet.

Continental Oil Company's Joss 3, CEL NW NE 6-36n-65w, is drilling at 3560 feet. Ohio Oil Company is rigging up rotary for Elizabeth Lamb 7, CEL NW NE 5-35n-65w.

Carbon County

Ohio Oil Company's Diamond Cattle Company 5, NWc SW NW 32-27n-88w, an old well deepened from the Dakota in the Rock River field, Carbon County, cored 60 feet of saturated Sundance sand between 3163-3223 feet and is running tubing to test. It is believed the well will make a good producer.

On Big Medicine Bow Dome, Ohio Oil Company and The California Company's State 2, CNW NW 36-21n-79w, is coring the Dakota at 5193 feet and is showing gas. The Sundance is expected at around 5400 feet. Same operators' Union Pacific 1, Account 1, NE SW SW 24-21n-79w, is drilling shale at 2751 feet.

Big Horn County

Byron field, Big Horn County, northern Wyoming, reports a completion and a new location this week, while the Garland field adjoining Byron has a near completion. Ohio Oil Company's Byron-Union 3, SE NW 25-56n-97w, Byron, completed for 350 barrels initial on the pump. Well logged the Embar lime at 5543-5636 feet where it went into the Tensleep sand. Hole bottoms at 5750 feet.

Ohio's Byron-Union 4, CSW NE 22-56n-97w, in the same field, is rigging up rotary.

Ohio Oil Company's P. G. Sessions 3, NWc 33-56n-97w, in the Garland field, is a near completion. Well is coring the Madison formation at 3868 feet and showing oil saturation.

Joan Oil Company's Howell 1, NEc NW NE 2-55n-97w, Garland, is drilling at 1400 feet. In the same field Yale Oil Corporation's Allen 1, SE NW SE 33-56n-97w, is drilling at 3166 feet. Peter Evanoff's McAllister 1, NW NE 3-55n-97w, Garland, is drilling at 2815 feet.

Hot Springs County

In the Grass Creek field, Stanolind Oil and Gas Company's Ridgely 20, C SE NE 19-46n-98w, is still a rig. Ohio Oil Company's Mill Iron Cattle Company 72, NE SE SE 19-46n-98w, in the same field, is drilling at 2204 feet headed for the Tensleep formation.

SMALL FIELD OPENED

Shallow horizons near Price are productive

Denver.—A small shallow oil field has been opened up in the Price district, Archuleta County, southwestern Colorado. Wm. E. Hughes Estate Fee 2, on unsurveyed land, approximately southwest 24-33n-2e, is rigging up to go on the pump. Since October 10, the well has produced 300 barrels in swabbing tests. The first five hours the well swabbed 110 barrels and on two other tests it made 27 barrels in five hours. The producing sand, identified as the Tocito member of the Mancos shale, was topped at 1085 feet. Hole bottomed at 1120 feet.

The Hughes Estate has moved drilling machine to the NW NW SE 25-33n-2e, for a third test of the district. The new location is an east offset to Oil City Petroleum Company's Garnett 2, Lot 3, NW NE SW 25-33n-2e, which is preparing to run the 5 3/16-inch casing to 1515 feet.

Continental Oil Company's Hoye 3, NW NW NE 34-9n-78w, South McCallum Dome, Jackson County, cored through the Dakota sand at 4962-5069 feet and identified that horizon as the sand carrying the troublesome carbon dioxide gas and the high gravity crude developed in the initial wells on the structure. Keeping the hole heavily loaded with mud the drilling contractors, Manning Terry, Inc., experienced no difficulty in penetrating the sand. Well is shut down waiting on cement to set around the 9⅝-inch casing at 5072 feet. The well will core into the Dakota sand where oil production is expected. Mechanical difficulties incident with the expansion and freezing of the carbon dioxide gas in the first two wells on the Hoye lease never allowed the company to deepen to test lower Sundance. The carbon dioxide sand was first thought to be the Muddy.

Mountain Fuel Supply Company completed Kuykendall 1, NE NE SE 22-12n-100w, Hiawatha gas field, Moffat County, northwestern Colorado, for 147 barrels initial. In the Florence Wilson 1, sand member, of the Watsach series, at 2230-2480 feet. On the second day production dropped to 102 barrels. Oil in small quantities has been shown in other Hiawatha wells as the gas cap has been drained since discovery of the field in 1923.

NEW MICHIGAN POOL

May be opened by test in Saginaw County

MICHIGAN

WEEKLY STAFF REPORT

Mt. Pleasant.—King Drilling Company's Kube 1, 12n-2e-31, Saginaw County, flowed approximately 1000 barrels of oil over a two-day test from 108 feet in Traverse lime, bottom hole 2738 feet, and may open a new pool in Central Michigan.

Test is uncased below the Marshall sand and with approximately 2000 feet of uncased six-inch hole, caving was believed to have started on October 22. The flow, by heads, averaging 20 to 25 barrels an hour the previous day had rapidly diminished.

The wildcat test is approximately 11 miles southeast of the Porter oil field (Dundee lime producing horizon 3400 feet). Elevation on Kube is 664.2 above sea level.

King Drilling Company headed by Nate King and Elmer Brehm with Mid-West Refining Company are the major interest holders in the lease with considerable adjoining acreage. Development on an important scale probably will await additional testing of the well.

K. K. Leibrand's State No. 1, 15n-2e-32, Midland County, bailed free oil from Berea sand at 2400 feet on October 22. Testing was halted when the bailer was stuck in the hole. The test is in wildcat territory.

From the boom stage of four months ago development in the Crystal-Ferris district of Montcalm County has at the present time subsided, although 30 strings of tools were active this week. Shell Petroleum Corporation completed the Bogert 1, 11n-5w-26, south-offset to the United Producers-Conners 1 (initial 900 barrels at 3240 feet) for 400 barrels natural, the first commercial production found in that area since the Conners was brought in 1½ ahead of production. At the same time Morris-Barne's Pugsley 2, 11n-5w-26, a quarter

mile south of the Shell-Bogert, failed to get commercial Dundee production.

Eastern Gulf may deepen the Conners 1, 11n-5w-35, half mile south of the Shell producer, after failing to get production in Dundee lime.

MICHIGAN
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ALCONA COUNTY—		
Black River Oil Co.'s Ranger 1, 28n-9e, sec 22	*	....
BAY COUNTY—		
McClanahan Oil Co., Dahike 1, 17n-4e, se sw sw-27	*	2950
IONIA COUNTY—		
J. V. Wicklund, Cutler 1, 8n-6w, nw sw nw-10	*	3192
MECOSTA COUNTY—		
Mohawk Oil Co., Keilhotz 1, 13n-7w, c ne ne-32	¶6½	1301
MIDLAND COUNTY—		
Pure Oil Co., Miller 2, 13n-1w, sw ne-16	100	3420
L. J. Baker, Hill 1, 13n-1w, se se se-8	50	3442
Carter Oil Co., Carter 8, 13n-1w, nw		
Baum & Shine, Long 1, 13n-1w, c n½ nw ne-19	200	3415
se sw-18	50	3425
Pure Oil Co., Corning 1, 13n-2w, c se se-2	50	3446
MONTCALM COUNTY—		
D. F. Jones, Wilson 1, 12n-7w, c ne nw-10	¶17	1300
J. W. Leonard, Jr., Hustead 3, 10n-5w se sw sw-2	*	3200
Shell Pet. Corp., Bogert 1, 11n-5w, ne nw sw-26	400	3240
OGEMAW COUNTY—		
J. C. Newell, Tolfree 1, 21n-3e, sw nw sw-5	*	1300
H. C. Nelson, State 2, 22n-3e, sw se sw-31	50	2620
Morris-Barnes, Golf Club 2, 22n-2e, sw sw se-20	75	1768
Capitol Oil Co., Country Club 1, 22n-2e, sw sw sw-20	30	2650
OSCEOLA COUNTY—		
Sun Oil Co., McLachlin 1, 17n-8w, c nw nw-35	*	4008
SAGINAW COUNTY—		
Smith Petroleum Co., Grant Morse 1, 10n-6e, nw sw sw-21	10	1550
Morse B-2, 10n-6e, se sw ne-20	12	1546
Frost 1, 10n-6e, ne sw nw-20	8	1550

*Failures; †Junked; ¶Million cu. ft. gas.

Indiana Active

HEAVY GAS DEMAND CAUSE OF INCREASED WORK

EASTERN FIELDS

WEEKLY STAFF REPORT

Vincennes, Ind.—Oil and gas have both been the reward of drillers in Southwestern Indiana fields during recent weeks.

Two gas wells in Knox County were drilled in last week, one producing 2,500,000 and the other 3,500,000 cubic feet, while in Pike County a million-foot flow was struck at 740 feet. Tools were removed and the well hastily capped with great difficulty. The pressure of the well was said to be extraordinary for this locality.

Many leases are changing hands in local fields. New operators are entering Southwestern Indiana. Prices on options have been boosted considerably and while most of the drilling is being done by companies which have been on the ground for sometime, many new ones now hold leases and are planning to start operations.

Local supply houses report large orders for materials and parts. They report that operations are the heaviest in years and that plans are under way for more activity.

The best oil well to be drilled in this locality in recent weeks was reported by Murphy Oil Company in Stewart Bros. 2, Pike County, a 100-barrel producer.

Several other oil wells were drilled in recently, but in most cases companies have refused to state their production.

Wells drilled by Midwest Development Corporation and Big Four Oil and Gas Company in Gibson County were termed "good wells." The companies refuse to name their exact production, but it is reported that they each produce more than 90 barrels per day.

Smaller oil wells have been reported in Daviess, Vanderburg, Lawrence, Perry, Pike, Sullivan and Vigo Counties, with the production varying from eight to 30 barrels per day.

Many of the wells in the local field are being drilled in an effort to supply a large increase in demand for natural gas. The demand has come both from domestic and industrial sources. Evansville, Princeton, Vincennes and Terre Haute are all demanding larger amounts of natural gas and are supplied entirely or in part from local fields.

An industrial boom in Evansville has caused a heavy demand for gas there. Many of the new factories plan to use gas extensively in their work. The large new automobile body plant plans large use of gas in its finishing departments.

Indiana Southwestern Gas Corporation and Midwest Development corporation are particularly active in gas operations in Daviess, Pike and Gibson Counties. One Daviess County well just completed recently is now supplying the entire town of Loogootee, with about 400 openings in homes.

EASTERN STATES
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
PENNSYLVANIA		
GREENE COUNTY—		
Washmuth & Callahan, Goodson 1	¶	1548
Carnegie Nat Gas, Orndoff 1	4	3120
ALLEGHENY COUNTY—		
Wm. Snee & Co., Patterson 1	¶	3429
WASHINGTON COUNTY—		
Potter Co., Fee 1	¶	2405
SOUTHEAST OHIO		
MEIGS COUNTY—		
Lucy Homes & Co., McKenzie 1	¶	2038
Ohio FG Co., Winter 2	¶	2097
Tyree & Co., Jividen 2	1	715
COSHOCTON COUNTY—		
Griffin. Tustin & Co., Neiderhouser 1	10	2875
PERRY COUNTY—		
Thistle Oil Co., Stotler 8	7	1105
KNOX COUNTY—		
Upham Gas Co., Sapp 1	*	3160
Whealer 1	*	3107
LIMA		
WOOD COUNTY—		
Frank Wolf, Fee 1	*	....
ALLEN COUNTY—		
Martin Brothers, Kelly 1	5	....
Mich-Ohio Oil Co., Clark 1	8	....
HARDIN COUNTY—		
George & Co., Thompson 1	¶	1311
CENTRAL OHIO		
STARK COUNTY—		
H. & E. Fawcett, Fee 1	¶	4611
KNOX COUNTY—		
Ohio FG Co., Scott 2	¶	3151
Upham Gas Co., Wheaton 1	*	2848
Pure Oil Co., Clark 4	2	3173
R. E. Perkins, Lepley 1	¶	2848
WAYNE COUNTY—		
Nelson & Co., Iches 1	*	630
ASHLAND COUNTY—		
Robison & Co., Allerholt 1	*	721
MEDINA COUNTY—		
Pete Garapick, Ziolek 1	*	825
GUERNSEY COUNTY—		
Ohio P&R Co., Gadd 5	25	3639
Ohio FG Co., Nesbitt 6	¶	1341
Keenan 1	¶	1553
Lyons & Co., Birney 1	¶	3760
TUSCARAWAS COUNTY—		
Jas. Upham, Whlers 1	¶	4812
HOCKING COUNTY—		
A. J. Colgin, Null 1	*	2750
ATHENS COUNTY—		
D. T. Orndoff, Keirns 1	¶	562
KENTUCKY		
OHIO COUNTY—		
Petroleum Co., Bellamy 10	30	....
Marrietta Oil Co., Escridge 1	5	....
Teller & Co., Whitehouse 4	35	....
J. C. Ellis, Richard 6	*	....
Snowden & McSweeny, Cheek 2	15	....
O'Dell 23	3	....
O'Dell 24	25	....
WEST VIRGINIA		
BOONE COUNTY—		
Pon Fork O&G Co., Cole & Crane 22	¶	1752
LOGAN COUNTY—		
Boone County Coal Corp., Fee 4	¶	2470
CABELL COUNTY—		
Lee Sanson & Co., Whittaker 1	¶	2690
Brown Gas Co., Bias 1	¶	1437
GILMER COUNTY—		
A. E. Ellis & Co., Cunningham 1	¶	....
Hope C&R Co., Simmons 1	8	3372
RITCHIE COUNTY—		
Reno Oil Co., Wrick 1	¶	1850
WOOD COUNTY—		
W. B. Wamsley, Hendershot & Smith 2	¶	1669
KANAWHA COUNTY—		
Harvard Gas Co., Compton 3	*	633
Cambridge Gas Co., Complin 1	*	600
CALHOUN COUNTY—		
Massey & Jarvis, Valentine 1	*	1600
Starcher & Richards, Campbell 1	¶	1409
ROANE COUNTY—		
Guy Boggess & Co., Wallbrown 1	¶	2014
Hunt & Co., Moore 2	¶	....
MONONGALIA COUNTY—		
Carnegie Gas Co., Brand 1	¶	3295
CLAY COUNTY—		
Brown-Swan Oil Corp., Fee 4562	35	2076

*Failures; †Junked; ¶Million cu. ft. gas.

Small Producers

HUNTINGTON BEACH TOWN LOT AREA OFFERS NO THREAT

WEEKLY STAFF REPORT

Los Angeles.—Apparently there is very little to be feared in the way of over-production from the new activity in the Huntington Beach town lot area. Three small wells were brought in in this field during the past week. Andel Oil Company No. 1, depth 2837 feet, with 6⅝-inch casing cemented at 2697 feet, made an initial production of 60 barrels per day. Associated Oil Company's Fowler 8, depth 4256 feet, with nine-inch casing cemented at 3400 feet, is making 149 barrels per day. And Dorn & Baker's Thompson 1, depth 4620 feet, with seven-inch casing cemented at 4274 feet, is pumping 90 barrels per day.

One of the biggest handicaps in completing these wells lies in the water trouble. This is one of the older fields in the Basin, all of the flush production having been removed years ago, and even on recent completions the water content averages about 25 percent. A few wells have had cuts ranging as high as 85 percent.

This new activity was started by the completion of Charles W. Camp's first well for an initial production of 400 barrels per day last April. Since that time about 20 wells have been drilled to the same zone but none have been fortunate enough to obtain production that even closely approaches the figure set by Camp's well. It now seems fairly certain that Camp's well is bottomed in a small pocket, hitherto undiscovered, and that the only chance for similar production lies in the extremely improbable discovery of additional pockets.

Dominguez Gas Well

Shell Oil Company's Reyes 71, Dominguez field, was completed as a gas well on October 16, for an initial production of 7,860,000 cubic feet per day of gas, with no oil. Total depth is 2690 feet, with 11¾-inch casing cemented at 2665 feet, and 61 feet of 6⅝-inch liner is landed at 2690 feet and perforated from 2663-90 feet.

The existence of this gas zone, which is above the upper oil zone, has been known for several years but this is the first well to be drilled with that zone as its objective.

Montebello

The most important development in the Montebello field during the past week was the tests made by The Texas Company in Baldwin 13. With total depth at 5500 feet and formation tester set at 5360 feet, this well made 10,000,000 cubic feet of gas per day rate. Most wells in this area have shown a much smaller gas flow and operators are at a loss to account for the presence of gas in this quantity.

A second test was made from 5440-5500 feet (with the gas zone packed off) and 815 feet of fluid was recovered in 30 minutes, of which about half was clean light gravity oil and the balance drilling mud and water.

This well is located just east of the productive limits of the old Montebello field and the showings obtained so far merely present one more problem in trying to solve the intricate geological puzzle of faults and cross faulting that has characterized the development of the East Montebello area.

Shiells Canyon

The Texas Company's Shiells 128, deep test of the old Shiells Canyon field, located in the central portion of the Santa Clara Valley district, Section 4-3n-19w, Ventura County, was completed on October 12, 1935, for an initial production of 173 barrels per day of 30.6 gravity oil, cutting 16.0 percent water.

Total depth of this test is 7423 feet but formations in the lower portion of the hole were barren and the well is producing from a plugged depth of 4081 feet. An 8⅝-inch water string was cemented at 4280 feet, prior to deepening to the lower formations, and this casing has been perforated 3878-75 feet, 3855-40 feet, and 3740-15 feet.

While this is a much smaller well than was expected, in view of recovery of 2000 barrels per day of oil on formation tests made with bottom of the hole at this point before deepening, it must be remembered that the best oil sand penetrated was just above 3550 feet and that zone is now cemented off.

QUIT KETTLEMAN TEST

South Dome wildcat flows hot salt water

Los Angeles.—Continental Oil Company is abandoning Gatchell 28-7, wildcat test located in Section 7-25s-20e, on the South Dome of Kettleman Hills, Kern County.

This well was drilled to 7849 feet and penetrated several horizons that gave promise of commercial produc-

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tion, none of which materialized. The last test was made of the zone from 7766 feet to bottom, on which the only production obtained was 3100 barrels per day of hot salt water.

Considerable trouble was encountered in running casing, the first string of 8⅝-inch being stuck just above 6000 feet. In testing the zone at 7420 feet a string of five-inch was set at 7350 feet, necessitating the cementing of a blank section of 3½-inch liner at 7766 feet for the last test. With that size casing on bottom, it was impossible to carry the test on down as originally planned.

Another test of the Reef Ridge district, Fresno County, located about ten miles southwest of the Kettleman Hills North Dome, was abandoned last week.

Taft Well Drilling Company's Kreyenhagen 1, Section 33-22s-16e, was carried down to 5005 feet, bottomed in hard shale belonging to the Eocene formation. A few showings of oil and gas were present in formations penetrated from 4200-4300 feet and 4920-5000 feet, but were not considered to be of sufficient merit to justify a production test.

This is the sixth dry hole drilled in this immediate locality, all of which had a few streaks of oil-stained sands, but none of which were able to develop production of any kind.

Good Mount Poso Well

Union Oil Company completed another good well in the Mount Poso field when S. & M. 28, Section 4-27s-28e, was brought in for an initial production of 1015 barrels per day of 18.4 gravity oil, cutting 0.1 percent.

Depth of this well is 1940 feet, with 8⅝-inch casing cemented at 1695 feet, and 6⅝-inch liner landed on bottom and perforated up to 1888 feet.

Due to the fact that leases in the Mount Poso field are held largely by the major companies, and development work has been slow and orderly, very little attention has been attracted by the area. The field embraces approximately 2000 acres of proven area, flush production has not yet been entirely removed.

TRACY GAS FIELD

Los Angeles.—One of the most important developments in the new Tracy gas field, 30 miles east of the San Francisco Bay district, in San Joaquin County, is the productive gas zone's proximity to the underlying water sands.

Amerada Petroleum Corporation's third test of the new field, Tracy 31-22, Section 22-2-5, made 20,000,000 cubic feet of gas on a drill stem test with depth at 4041 feet. Prior to setting 8⅝-inch casing at 4005 feet the hole was deepened to 4089 feet. However, after obtaining water shut-off on this casing, decision was made to deepen to 4133 feet, and on this production test the well was wet.

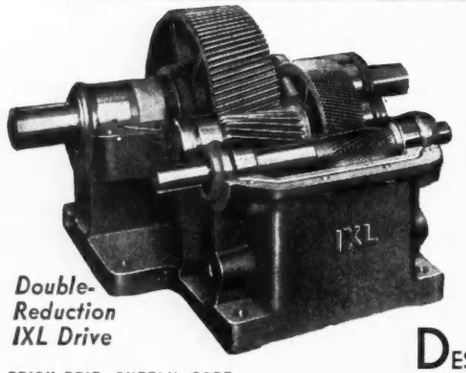
It is not known how much of this lower formation carries water but operators are plugging back in an effort to eliminate the water and bring in a clean gas well.

CALIFORNIA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
FRESNO COUNTY—		
Taft Well Dr. Co., Kreyenhagen 1..	*	5005
KERN COUNTY—		
Continental, Gatchell 28-7	*	7849
SHIELLS CANYON—		
Texas Co., Shiells 128	210	4081
EDISON—		
A. T. Jergins, Tr., Fee 6	200	1473
FRUITVALE—		
Western Gulf, Brackenbury 1	100	3533
MIDWAY-SUNSET—		
C. C. M. Oil Co., No. 12.....	40	1102
General, Moco 110-A	35	2324
MOUNTAIN VIEW—		
Hogan Pet. Co., Foster Com. 1.....4000		5971
Otis Hoyt, Petrol 1 1100		5905
Mahawk Pet. Co., Clendenon 6....4000		5932
Standard, Mullany 1 365		5260
Wood-Callahan Oil Co., National 4..2000		5890
Wells 1 900		6029
MOUNT POSO—		
General, Glide 3 350		1787
Union, S & M 28 1015		1940
SEMITROPIC—		
Milham Explor. Co. 27-24 ..... ¶3		2486
LONG BEACH—		
Big Four Oil Co., No. 1 150		4730
Commercial Dr. Co., No. 3 225		5655
Harlyn Oil Co., No. 3 100		3775
MacGregor Oil Co., No. 1 125		4045
Shelton Oil Co., No. 1 200		4130
DOMINGUEZ—		
Shell, Reyes 71 ..... ¶7.8		2690
Union, Hellman 39 65		4469
HUNTINGTON BEACH—		
Andel Oil Co., No. 1 60		2837
Associated, Fowler 8 150		4256
Dorn & Baker, Thompson 1 90		4620
OLINDA—		
C. C. M. Oil Co., Olinda 99 95		3946
SANTA FE SPRINGS—		
Union, Bell 85 250		4500

*Failures; †Junked; ¶Million cu. ft. gas.

*Failures; †Junked; ¶Million cu. ft. gas.



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DESIGNED and built to give uninterrupted service in the oil fields, IXL pump drives have met every test of daily use. In spite of heavy shock loads encountered in oil well pumping, they assure dependable performance. Not a single failure of an IXL Drive has marred their perfect record for the past three years. The helical gear ratings follow A. G. M. A. recommended practice and embody the gear-designing experience gained in 75 years of specialized work in building gears for tough service.

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The Bovaird Supply Co., Tulsa.
Decker Tool & Supply Co., Electra, Texas.
J. B. Kelin Iron & Foundry Co., Oklahoma City, Okla.
International Supply Co., Tulsa.
Jarecki Mfg. Co., St. Louis, Mo.
Muskogee Iron Works, Muskogee, Okla.
W. C. Norris Mfg. Co., Inc., Tulsa, Okla.
Oklahoma Iron Works, Tulsa.
Star Mfg. Co., Oklahoma City.
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THE OIL WEEKLY REPORT ON IMPORTANT *Wildcat Tests*

ALABAMA

BALDWIN COUNTY—Danciger O&R Co.'s U. S. Government 2, (Fort Morgan reservation), wocs 223 ft.

COVINGTON COUNTY — Geometer Prod. Co.'s A. B. Culbreth 1, sw sw ne 8-2n-14e, arr abn 6302 ft.

LAMAR COUNTY — DeSoto O&G Co.'s Gardner 1, nw nw 22-15-16, dr 4824 ft lime and chert.

MOBILE COUNTY—J. C. Prine's King 1, n½ ne 4-1n-4w, made electrical test, td 3115 ft, Wilcox sand.

ARKANSAS

ASHLEY COUNTY—Benedum & Trees Oil Co.'s Holmes 1, ne sw 4-17-5, elev 183 ft, top Cretaceous 2919 ft, core red lime 3435 ft. Texas-Seaboard Oil Co.'s Bynum Cooperage Co. 1, se sw nw 34-17s-4w, dr 2207 ft, hd black shale.

COLUMBIA COUNTY — Southern States Gas Co.'s Pinewoods Lbr. Co. 1, ne nw 10-20-22, elev 231 ft, top Nacatosh 1846 ft, sd 1904 ft.

DALLAS COUNTY—McCall & Kelly's R. Owen 1, nw sw 26-10-16, dr 2200 ft shale.

HEMPSTEAD COUNTY — Geo. L. Glass' May B. O'Brien 1, ne sw 32-12s-32w, dk and mir. F. W. Martin's Lafferty 2, se nw 17-14-27, rur.

LA FAYETTE COUNTY—Earl F. Fox's Coleman 2, ne ne 30-16-24, wocs 10-in csg 135 ft. Leach et al's Bodcaw Lbr. Co. 1, 20-16-23, lcn. Joe Modisett et al's Frost Lbr. Co. 1, sw sw 29-19-24, elev 261 ft, top Arkadelphia 1653 ft, 9⅝ in csg 2140 ft, dry at 3300 ft, coring 3316 ft. Transportation Pet. Co.'s Cochrane 1, ne se 26-19-25, Annona chalk 2337-2690 ft, dr 3133 ft. S. H. Riggs et al's DuBose 1, se sw nw 35-16-24, sd cur titles 2817 ft.

MILLER COUNTY—King Oil Corp.'s G. W. Crank 1, sw ne 19-16-25, dr 2503 ft. C. W. Hays et al's State of Ark. 1, sw se ne 31-15-25, 10-in csg 129 ft. C. V. Lenz's A. Dean 1, nw se 24-15-26, dr 1506 ft. McAlester Fuel Co.'s Cook 1, 18-20-27, mim. L. H. Mahan et al's Miller L&T Co. 1, sw se 29-18-27, 10-in csg 150 ft. Travis & Wair's Capps 1, 18-20-27, lcn.

MONROE COUNTY — Beaver Pet. Co.'s Stinson 1, se sw 27-4-2, dr 2100 ft. Monroe Oil Co. Inc.'s Harvey 1, se se 19-1-1, dr 1900 ft.

OUACHITA COUNTY—Benedum & Trees Oil Co.'s Brigham 1, ne sw 29-14-19, ream to bottom 3300 ft, shale and lime. Snow-Black Pet. Co.'s Jerry Bedford 2, sw sw 32-11-18, rur. (300 ft north of No. 1 junked and abd).

POINSETT COUNTY—Rockwell Dev. Co.'s Fee 1 13-11n-3e, hauling mud to stop heaving hole, td 2112 ft.

SEVIER COUNTY—Pendleton & Vaughan's Dierks Timber & Coal Co. 1, nw ne 14-10-29, dr 725 ft.

UNION COUNTY—Ark.Southern Oil Co.'s Laney 1, 32-19-16, 10-in csg 176 ft. Marine Oil Co.'s W. C. Tullis 1, se nw 12-19-12, spd. Ohio Oil Co.'s Sam Oliver 2, nw sw sw 7-17-13, lcn abnd. Proetz & Richardson's Calion Lbr. Co. 1, nw se 10-16-14, sd 3500 ft.

CALIFORNIA

KERN COUNTY

ARVIN—General's Mattson 1, 1-32-29, dr gray sandy shale 8701 ft. Hall-Baker Co.'s McGowan 1, 20-31-30, dr hard sand 1820 ft.

BUENA VISTA LAKE—Ohio's K. C. L. A-3, 31-31-26, dr shale 4178 ft. Shell's B. V. A. 1, 9-32-25, dr gray sand and shale 9245 ft.

CALIENTE—O & H Oil Co.'s O & H 1-A, 32-30-30, td 684 ft, wocs 6⅝-in 650 ft.

COMANCHE POINT—Comanche Oil Co.'s No. 1, 15-32-29, dr gray sand 4670 ft. Tejon Ridge Oil Co.'s No. 1, 23-32-29, sd 2177 ft.

EDISON—Bauer Oil Co.'s Bauer 1, 21-30-29, dr shale 4420 ft, os from 4322 to 4346 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper.*
‡—*salt water (completions).*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on the ground.*
bbls—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
b.s.—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so & g—*show oil and gas.*
fsg.—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full of water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

Navy Oil Co.'s Caravel 1, 19-30-30, dr shale 811 ft.

FAMOSA—Ausbrit Oil Corp.'s No. 1, 20-27-27, rig.

GRAPEVINE—Silver Gate Co.'s Tejon 1, 7-10-19, dr shell streaks shale, sog 2732 ft.

LOST HILLS—Standard's United 1, 2-26-20, td 5816 ft, r to bottom.

McDONALD ANTICLINE—R. E. Bering's Maylan 2, 12-28-19, spud and sd.

McFARLAND—John H. Webb's Alta 1, 16-26-26, sd 2486 ft.

SAN EMIDIO—Ohio's K. C. L. C-11-49, 11-11-22, dr sand and shale 5620 ft.

SO. BUTTONWILLOW—Doyle Pet. Corp.'s No. 1, 5-30-24, sd 5265 ft.

SO. DOME—Continental's Gatchell 28-7, 7-25-20, abn 7849 ft, made 3100 bbls hot salt water.

SO. ROUND MOUNTAIN—Standard's M & T 1, 3-29-29, spud.

TRICO—Standard's Bolz 1, 33-24-23, wocs 13⅜-in on bottom 514 ft.

MISCELLANEOUS

FRESNO COUNTY—Taft Well Dr. Co.'s Kreyenhagen 1, 33-22-16, (at Reef Ridge) abn 5005 ft; found sand streaks at 4100 to 4200 ft, and 4890 to 4980 ft.

KINGS COUNTY—Milham Explor. Co.'s W. T. L. Co. 1, 5-22-19, rur.

MADERA COUNTY—Pure's Chowchilla 2, 8-10-14, prep to spud.

SAN JOAQUIN COUNTY—Amerada's F. D. L. 1, 15-2-5, dr sand and shale 8340 ft; Tracy 31-22, 22-2-5, td 4133 ft, zone from 4089 ft to bottom was wet, plugging back.

TEHAMA COUNTY — Northern Counties Pet. Co.'s Ewers-Mooney 1, 25-24-3, td 5032 ft, recemented 9-in at 4904 ft.

MONTEREY COUNTY—Shell's Branch 1, 34-24-10, dr brown shale streaks black shale 5725 ft.

SANTA BARBARA COUNTY

CARPINTERIA—Santa Barbara O&G Co.'s Bryce 1, 29-4-25, dr hard shale 170 ft, with cable tools.

GOLETA—Shell's Hollister 2, 10-4-29, dr sand and shale 2019 ft.

LOMPOC—M. J. Freeman's LaBrea 1, 11-7-33, td 1462 ft in shale, to run liner and test.

SANTA MARIA—O. C. Fields Gaso. Corp.'s No. 1, 28-10-33, dr hard shale 1000 ft.

SUMMERLAND—Marmonte Oil Co.'s No. 1, 16-4-26, spud Oct. 15.

VENTURA COUNTY

BARDSDALE—El Rancho Oil Co.'s Elkins 1, 9-3-19, td 1083 ft, rur. Union's Dryden 10, 12-3-20, dr sand and shale 4812 ft.

FILLMORE—Texas Co.'s Unit Plan 2-1, 29-4-19, dr sand and shale 4783 ft.

OXNARD—General's McGrath 1, 26-2-23, dr sand and shale 7624 ft.

PADRE CANYON—Continental's Hobson 1, 15-3-24, foundations.

SHIELLS CANYON—Bankline Oil Co.'s Calumet B-1, 3-3-19, dr shale and streaks os, 3582 ft. Texas Co.'s Shiells 128, 4-3n-19w, completed 210 bbls, 30 grav. oil with 16 percent water cut, at plugged depth of 4081 ft, from 7423 ft.

SIMI—Jas. S. Hull's No. 1, 2-2-18, dr shale 1007 ft. Paloma Oil Co.'s Paloma-Marr 1, 12-2-18, td 2740 ft, wocs 6⅝-in 2640 ft.

VENTURA—Ventura Explor. Co.'s Sexton 1, 30-3-22, dr sandy shale 6940 ft, showings on ditch.

SOUTHERN CALIFORNIA

BREA CANYON — Pressel - Perry - Tull's Baird 1, 30-2-9, td 4535 ft, bailing hot salt water from 4470 ft.

CARBON CANYON—Tehama Pet. Corp.'s Kramer 1, 33-2-8, td 3053 ft, wocs 7-in on bottom, to perf and test by stages.

EAST MONTEBELLO—Wilshire Annex Oil Co.'s Baldwin C-1, 11-2-11, dr sand and shale 2531 ft.

EL SEGUNDO—Larco Oil Co.'s Van 1, 12-3-15, td 7600 ft, ran formation tester, left 156 ft liner in hole. fsh.

HAWTHORNE—Lennox Oil Co.'s No. 1, 9-3-14, rig.

KRAEMER—Ted Cook's No. 1, 25-3-9, rur. Leaseholders Dev. Co.'s Vejar 1, 26-3-9, td 4056 ft, co. Standard Oil Co.'s Yorba Com. 1, 36-3-9, dr sand and shale 1200 ft.

LAWNDALE—Sovereign Oil Corp.'s Ben Long 1, 22-3-14, td 6069 ft, redr at 4608 ft sand and shale.

PICO—Frontier Oil Co.'s No. 1, 12-2-12, sd 5246 ft.

PUENTE—No. American Oil Consolidated's Smith 3-1, 30-1-10, dr sandy shale and gray sand 3520 ft.

SANTA ANA—Continental's Santa Ana Com. 1, 14-5-10, dr sandy shale 3076 ft.

SAUGUS—International Oil Developers' Powell 2, 34-5-16, dr shale 760 ft.

TOPANGA CANYON—Monarch Pet. Co.'s Sylvia Park 1, 5-1-16, sd 212 ft.

TORRANCE—Eyers Pet. Corp.'s No. 1, 20-4-13, spud and sd. Pioneer Holding Co.'s Pioneer 1, 33-3-14, dr hard shell 2084 ft.

SAN BERNARDINO COUNTY—Equitable Pet. Explor. Co.'s No. 1, 11-10-5, dr hard shale and sandstone 1760 ft, slight showings on ditch. Hillman Long's Pellissier 1, 2-3-8, sd 2418 ft.

COLORADO

ADAMS COUNTY—Riddle Petroleum Co. Baxter 1-C, sw 2-3s-6w, working on water well at 1335 ft.

ARCHULETA COUNTY—Wm. E. Hughes Estate Fee 2, sw 24-3n-2e, completed for 110 bbls, swabbing. Wm. E. Hughes Estate Fee 3, nw nw se 25-33n-2e, mim. Navajo Oil Co., Crowley 1, ne 11-32-1e, artesian water struck at 1129-1138 ft, will shut off with 5 3/16-in csg. Oil City Petroleum Co. Garnett 2, nw nw sw 25-33n-2e, will run 4¼-in csg, td 1515 ft.

BOULDER COUNTY—Leslie R. Steele et al Maxwell 1, sw ne nw 24-1n-71w, dr at 2177 ft in black shale.

JACKSON COUNTY—Continental Oil Co. Hoye 3, nwc ne 34-9n-78w, standing with 9⅝ in csg cemented at 5072 ft.

HUERFANO COUNTY—Collins & Quinn Fee 1, cnl nw se 4-28s-68w, redr to 3810 ft, running 5 3/16 in csg.

JEFFERSON COUNTY—Ruby Hill Oil Co. Braden 1, se se 24-4s-69w, dr 4170 ft.

MORGAN COUNTY—Swisher et al Lunt 1, sw sw sw 3-5n-60w, dr 1112 ft.

PARK COUNTY—South Park Oil Co. State 1, se se sw 16-11s-17w, td 3650 ft, repairing rig.

FLORIDA

HILLSBOROUGH COUNTY — Southern Pet. Co.'s Mizell & Williams 1, se ne 4-32s-21e, sd while fsg, ds hung at 1000 ft, td 2465 ft (high water).

JACKSON COUNTY—Ray L. Estabrook et al's fee not given, ne nw se 15-5n-9w, lcn.

LAKE COUNTY—Oil Dev. Co. of Fla.'s

Gulf Expl. Co. 1, se se 17-24s-25e, dr 2180 ft.
PINELLAS COUNTY—Dr. Edawrd A. Hill et al's W. J. Meyers 1, ne ne 2-27s-25e, rebldg dk.
POLK COUNTY—Lr. Edw. A. Hill et al's Polk Co. Lbr. Co. 1, nw ne 32-25s-25e, dk.

KANSAS

BARTON COUNTY—Torrey & Feaster et al's Feist 1, ne ne se 29-18s-11w, running 5-in csg 3431 ft. Lario et al's Peter 1, nw nw nw 24-20s-11w, td 3291 ft, to acidize. Lario et al's Smith 1, sw nw nw 26-18s-13w, mim. Price et al's Ehrlich 1, nw nw se 10-16s-13w, sd 3375 ft. Continental Oil Co.'s Lamatsch 1, ne ne ne 26-17s-12w, lcn.

BUTLER COUNTY—Western Kansas Prod. & Ref. Co.'s King & Marshall 1, nw nw sw 11-28s-6e, td 3051 ft, 1000 gals acid, pumped 207 bbls oil 12 hrs. Mohawk Oil Co.'s Overstreet 1, nw nw nw. 19-26s-8e, td 5867 ft, 1000 gals acid, testing. Palmer et al's Ellis 1, ne ne ne 7-25s-4e, td 2680 ft.

COWLEY COUNTY — Wakefield et al's Auman 1, se se ne 32-33s-3e, swab 35 bbls oil. Winkler-Koch et al's Harlan 1-B, cnw ne 13-31s-7e, sd 1400 ft. Earl Wakefield's Hanna 1, ne ne sw 2-31s-4e, co 1070 ft. Shawver et al's Hanna 1, ne nw se 29-30s-3e, dr 2240 ft. Johnson's Ferguson 1, nw sw se 17-30s-8e, dr 1250 ft.

ELLIS COUNTY—Helmerich & Payne et al's Kuhn 1, nw sw ne 16-13s-20w, td 3900 ft, mirt. Lewis Roark et al's Bemis 1, se se se 16-11s-17w, 200 gals acid, pumped 540 bbls oil 23 hrs. Palmer & Storm King's Bowlby 1, ne nw nw 13-11s-16w, td 3695 ft, D & A. Twin Drlg. Co.'s Goetz 1, sw sw se 3-14s-17w, spd & sd.

ELLSWORTH COUNTY—Slick, Pryor & Lockhart et al's Sturn 1, nw nw sw 26-17s-10w, rug. Gypsy & Texas Co.'s Lapham 1, sw sw sw 27-16s-7w, dr 1400 ft. Tom Palmer's Splitter 1, nw ne se 17-17s-8w, dr 1425 ft. Lario et al's State 1, sw sw sw 29-15s-8w, td 2525 ft, D & A.

GRAHAM COUNTY—Helmerich & Payne's Stites 1, csw sw 8-19s-22w, td 4220 ft, pb 3866 ft, D & A. Vickers Pet. Co. et al's Hutton 1, ne ne se 29-8s-22w, fsg 818 ft.

GRANT COUNTY—Piney O&G Co.'s Kennedy 1, csw ¼ 10-29s-36w, ru.

HASKELL COUNTY—Helmerich & Payne's Elliott 1, csw ¼ 30-29s-33w, br.

KINGMAN COUNTY—Lauck et al's Skilling 1, se se sw 33-27n-8w, dr 3143 ft.

LOGAN COUNTY—Alma Pet. Co. & McNelley's Watchorn 1, csw ne 13-15s-33w, dr 4990 ft.

McPHERSON COUNTY—Carey et al's Husband 1, se se nw 6-19s-13w, dr 3680 ft. Whan et al's Stromquist 1, sw se se 2-19s-3w, dr 2240 ft.

PRATT COUNTY—Skelly et al's Gilchrist 1, cse ¼ 7-28s-11w, td 3605 ft, rust.

RENO COUNTY—Allison-Fitzwilliams et al's Dukelow 1, ne ne ne 11-22s-8w, dr 4068 ft. Shell Pet. Corp.'s Reese 1, cw¼ w¼ sw 11-26s-9w, fsg. McPherson Drlg. Co. et al's Miller 1, ne ne nw 34-24s-5w, td 3501 ft, 3000 gals acid, 176 bbls oil, comp. Ghormley's Duwe & Dustin 1, cne nw 17-24s-7w, spd & sd. Douglas & Gray's Detter 1, ne se nw 28-22s-7w, cellar. Amerada et al's Hilger "A" 1, ne ne sw 21-26s-4w, dr by 3730 ft.

RICE COUNTY—Douglas & Hutchinson O&G Co.'s Hammell 1, ne ne ne 16-19s-10w, 1000 gals acid 3350 ft, no test, sd. Anderson-Kerr's Wernet 1, nw nw nw 24-20s-9w, co 3526 ft. Aylward et al's Haas 1, ne nw ne 4-19s-10w, td 3365 ft, D & A. James Davis' Bernstarf 1, sw sw sw 19-19s-10w, sd 3366 ft. Continental Oil Co.'s Ferguson 1, se nw ne 8-18s-7w, td 3323 ft, pb 3230 ft, pumped 387 bbls oil, comp. Detrick et al's Conner 1, cne ne 28-19s-7w, fsg 2275 ft. Empire O&G Co.'s Schroeder 1, sw se se 7-18s-9w, dr 785 ft. Continental, Empire and Shell's Community Buckbee 1, se nw sw 13-18s-8w, lcn. Detrick et al's Monroe 1, cne ne 9-20s-7w, sd 890 ft.

ROOKS COUNTY—El Dorado Ref. Co. et al's Marshall 1, cse se 8-7s-17w, ur 10-in csg 2520 ft. Lario et al's Fisher 1, ne ne ne 22-10s-18w, co 3635 ft. Gillespie & Son's Low 1, ne ne nw 12-6s-18w, fsg 1560 ft.

RUSH COUNTY—Ramsey Pet. Co. et al's Darkes 1, sw sw nw 5-17s-20w, dr 3832 ft.

RUSSELL COUNTY — Roth & Farrout's Shaffer 1, nw nw ne 31-13s-12w, pot 36 bbls oil, will retest. J. Brouk & R. D. Bailey's Galliart 1, nw nw se 34-15s-12w, pumped 456 bbls oil, comp. Nassau Oil Corp.'s Karst 1, nw sw ne 27-15s-14w, td 3319 ft, 2500 ft oih, running tubing. Coraleana's Berrick 1, ne nw ne 6-15s-13w, dr 3140 ft. Hartman & Blair et al's Claussen 1, se ne sw 34-12s-14w, sd 3122 ft. Johnson et al's Mermis 1, ne ne sw 29-13s-15w, dr 1650 ft. Central Pet. Co.'s Boxberger 1, nw nw nw 36-15s-15w, fsg 327 ft. Reynolds Fredrickson 1, se sw se 6-13s-12w, spd & sd.

SEDGWICK COUNTY—Dickey et al's Chase 1, se se se 11-27s-2e, td 3279 ft, 1000 gals acid, no test. Derby et al's Bartholomew 1, sw sw nw 8-27s-4w, td 4022 ft, pumped 102 bbls oil, comp.

STAFFORD COUNTY—Atlantic & Phillips Pet. Co.'s Cornwell 1, cne sw 4-25s-13w, dr 4240 ft. Atlantic & Phillips et al's Community Brown 1, cnw ne 16-23s-13w, dr 2980 ft.

SUMNER COUNTY—Winkler-Koch et al's Belseley 1, sw sw nw 2-32s-2w, td 4201 ft, pb. Wilson et al's Clark 1, csl nw 15-35s-1w, ur 8-in csg 2263 ft. Pulse's Buss 1, nw nw nw 12-32s-2e, br.

TREGO COUNTY—Hansa & Lauck's Lang 1, se se nw 1-14s-21w, ur 6-in csg 3850 ft. Vickers Pet. Co. et al's Secor 1, nw nw nw 25-15s-24w, ur 6-in csg 4306 ft. Central Commercial's Wagg 1, nw nw se 17-13s-21w, dr 806 ft.

WOODSON COUNTY—Coulter, Davidson et al's Paske 1, nw nw se 25-25s-13e, dr 1454 ft.

NORTH LOUISIANA

BOSSIER PARISH — Ark. La. Gas Co.'s Werner B-1, 7-17n-11w, rur. Bossier O&G Co.'s Sherrell 3, se se 13-19n-12w, ream to bottom td 2150 ft sandy shale. McKinney & Humphreys' Burkley 1, ne sw 36-21n-13w, mim. V. M. Miller et al's Curtis Plantations 1, se se 19-17n-12w, dr 800 ft, (formerly Neill et al's test). Producers O&G Co.'s Pettit 1, ne sw 17-17n-11w, dr 2911 ft. Producers O&G Co.'s E. C. Edwards 1, se sw 27-18n-11w, sd laying water line, 860 ft.

CADDO PARISH—W. F. Hayde's Thigpen-Herold 1, nw ne se 5-15n-15w, elev 281.8 ft top Nacatosh 1143 ft top chalk 1529 ft sd 1740 ft. A. D. King's Roach 1, 4-14n-16w, sd 2712 ft chalk. Tystan, Inc.'s Jolly 1, 22-22n-16w, top red beds 2345 ft dr 2445 ft.

CALDWELL PARISH—Critchett & Wood's Kyle 1, 18-11n-3e, dry at 1728 ft tested sw & est ½ mil ft gas at 1734 ft killed & dr deeper in new hole, old td 2228 ft.

CATAHOULA PARISH—McIntyre et al's Tensas Delta Lbr. Co. 1, sw nw se 18-10n-7e, cored 4 ft Cockfield sand 856-60 ft arr make ds test td 860 ft. Phillipi et al's La. Cent. Lbr. Co. 2, nw nw 41-9n-6e, dk.

CLAIBORNE PARISH—J. H. Lester's Zollie Green 1, nw ne nw 18-21n-6w, top Blossom 2800 ft showed sw, dr 3172 ft lime & shale. E. T. Oakes et al's Patton Est 1, ne ne 1-20n-5w, elev 357.3 ft top red beds 3460 ft top stringer anhydrite 3777 ft dr 3802 ft lime & shale. Ryan Oil Corp.'s Gladney 1, ne sw 27-20n-7w, dr 1125 ft.

DE SOTO PARISH—Cardinal Oil Co.'s A. D. Johns 1, se nw 20-14n-16w, bailing td 2649 ft. Century O&D Co.'s D. Bailey 1, ne sw 25-11n-14w, sd 2610 ft shale. Jal Drlg. Co.'s Scales A-1, se se 35-13n-12w, 8¼-in csg 2390 ft dr in with CT. Ed Saffold et al's Thigpen 1, sw ne 33-13n-13w, arr test 18 ft sand td 1936 ft (Ozan). M. L. Stephens et al's Alston 1, ne sw 11-11n-16w, swabbing td 2055 ft. C. T. Ruffin's Elmo P. Lee 2, nw sw 3-13n-14w, arr set csg td 2840 ft.

JACKSON PARISH—Caldwell land & Timber Co.'s Burroughs Est 1, ne nw 17n-1w, dk.

LINCOLN PARISH — Ark.-La. Gas Co.'s Fowler 1, nw sw se 10-17n-4w, elev 262 ft top Nacatosh 2275 ft, Annona chalk 2377-2650 ft top first anhydrite 4589 ft, main anhydrite 4629-5080 ft, gas sand 5281-5303 ft, 7-in csg 5270 ft, arr dr plug & test td 5303 ft. Caldwell Land & Timber Co.'s Luther Hammonds 1, nw ne nw 30-18n-1w, dk.

MADISON PARISH—Southern Land & Explo. Co.'s Deltic Inv. Co. 1, nw nw 1-17n-12e, dry 2010-80 ft claim sg in hd lime 2100 ft, arr test td 2100 ft.

NATCHITOCHES PARISH—Roy Raines et al's Raines 1, sw sw 28-9n-10w, fsg drill pipe, td 4303 ft Washita sand. Union Pet. Co.'s De-Blieux 1, ne nw 83-10n-7w, co 1870 ft.

OUACHITA PARISH — American Liberty Oil Co.'s Golson 1, nw nw 25-17n-1e, elev 160 ft, claim oil & gas sand 5330-66 ft cemtd 5½-in csg 5200 ft td 5381 ft black shale. J. B. Williams et al's Fee 1, se nw 7-16n-4e, lcn.

RAPIDES PARISH — Amerada Pet. Co.'s Weil 1, 33-1s-2e, tested 4 thribbles oil & 1 of sw 5704-52 ft cemtd 7-in csg 6015 ft dr in 6040 ft.

SABINE PARISH—Travis et al's Baker 1, 36-8n-12w, owdd, td 4127 ft.

TENSAS PARISH—H. M. Jones' Hankins 1, 30-12n-10e, rur.

WEBSTER PARISH—Red Hawk Oil Co.'s Mayfield 1, 9-23n-9w, rur.

WINN PARISH—P. E. Parsons et al's Tremont Lbr. Co. 1, nw sw 10-12n-2w, top Cane River 960 ft arr deepen 1240 ft gumbo & bldrs (Wilcox).

SOUTH LOUISIANA

CALCASIEU PARISH—Fred Oil Co.'s Faist 1, sec 26-8s-10w, sd 4020 ft. Wheeler Oil Co.'s School Land 1, s of Iowa field, sec 16-9s-7w, dr shale 6908 ft.

CAMERON PARISH—Magnolia's Broussard 1, Willow Lake area, sec 13-12s-9w, dr sand and shale 8987 ft. Pan American Production Co.'s Lutcher Moore 1, Mud Lake prospect, sec 32-14s-11w, building road.

EVANGELINE PARISH—Sparks-Mitchell & Jacobson's Vidrine 1, sec 47-3s-2e, sd 1655 ft.

EAST BATON ROUGE PARISH — Superior's Duplantier Community 1, University Block, sec 65-7s-1w, abd 10,360 ft.

IBERIA PARISH—Texas Co.'s Fausse Point 1, s flank of dome, sec 35-11s-8e, fsh 6400 ft. Jefferson Lake Oil Co.'s Lake Pigneur 274, Jefferson Lake, 12s-5e, fsh 8545 ft.

JEFFERSON DAVIS PARISH — J. K. Lewis' Lock-More 1, Heckner prospect, sec 32-7s-6w, dk.

PLAQUEMINES PARISH—Wrather et al's Hero 1, near Oakville, sec 72-14e-24e, fsh 5343 ft.

ST. BERNARD PARISH — Emerald Pet. Co.s Shell Beach Properties, Shell Beach prospect, sec 31-13s-15e, cleaning 7390 ft.

ST. MARY PARISH—F. F. Kramer's Robinson 1, sec 78-14s-14e, sd 100 ft. Herton Oil Co.'s Roanes 1, sec 40-13s-9e, dr shale 1542 ft.

ST. MARTIN PARISH—Texas Co.'s State Lake Mengouloi 1, 3 mi n of Bayou Chene, sec 10-9s-9e, dr shale 5385 ft. Tide Water Oil Co.'s Smede 1, St. Martinsville prospect, sec 57-11s-5e, sd 5430 ft.

ST. TAMMANY PARISH—Danciger Oil & Refining Co.'s E. F. Holdsworth 1, Slidell prospect, sec 26-9s-14e, dr shale 1154 ft.

VERMILLION PARISH — Del-Shell's Delcambre 1, sec 63-12s-5e, dr gumbo 2521 ft.

MICHIGAN

ALCONA COUNTY — V. R. Kirkham's Josephson 1, 27n-8e-29, lcn; Monteith 1, 27n-8e, ne ne nw-2, lcn.

ALLEGAN COUNTY — Heath Oil Co.'s Terpstra 1, 3n-14w-34, dr 2300 ft. Gerrit Vander Least's Berens 1, 4n-14w-26, rig.

ARENAC COUNTY—Deep River Oil Co.'s Stocko 1, 19n-4e-27, sd 2700 ft.

BAY COUNTY—M. C. Fordyce's Suszko 1, 18n-3e-11, dr 2700 ft.

CLINTON COUNTY—John Martin's Scott 1, 8n-2w-22, dr 1100 ft.

GENESEE COUNTY — Rowmor Oil Co.'s Gillespie 1, 5n-5e, sw sw sw-3, rig. Smith Petroleum Corp.'s Torrey 1, 9n-8e, nw nw ne-5, lcn.

GLADWIN COUNTY — United Producer's Nettleton 1, 17n-2e-24, dr 2500 ft.

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GRATIOT COUNTY—St. Louis Pipe's Loganbach 1, 12n-2w-10, sd 3350 ft; North Mutual 1, 12n-4w-25, sd 3300 ft. Miller Brothers' Ryan 1, 9n-1w-22, dr 600 ft. Jackson and Myer's Garner 1, 9n-4w-10, dr 3190 ft. Charley Bell's Velie 1, 12n-1w-13, dr 1500 ft.

HURON COUNTY — Wallace Markle's Opaka 1, 15n-11e-4, dr 1900 ft.

IONIA COUNTY—Gordon Oil Co.'s Muir Bank 1, 8n-5w-30, dr 1400 ft. Greer and Meal's Welch 1, 8n-6w-33, rig. A. F. Holliday's Abbey 1, 13n-7w-36, dr 500 ft.

JACKSON COUNTY — Petroleum Dev.'s Mulvaney 1, 1s-1e-31, sg 1790 ft, sd 1820 ft.

KENT COUNTY—National Mineral's Lewis 1, 10n-11w-5, sd 2500 ft. James Barton's Smith 1, 10n-10w-29, rig.

LAKE COUNTY—C. W. Teater's McCabe Estate 1, 20n-12w, ne sw sw-26, lcn.

MECOSTA COUNTY—Columbia Oil Co.'s Bale 1, 13n-8w-31, dr 2900 ft. Strosnider Oil Co.'s Hand 1, 13n-9w-4, rig. Goll Graves Mechling's Ruetz 1, 14n-7w-17, dr 350 ft.

MIDLAND COUNTY — K. K. Leibrand's State 1, 15n-2e-32, so&g 2400-10 ft, testing.

MISSAUKEE COUNTY — M. J. Ingold's Donley 1, 22n-8w-31, rig.

MONROE COUNTY—A. & V. Oil Co.'s Vandercook 1, 6s-6e-30, dr 1000 ft.

MONTCALM COUNTY—Frank J. Asam's Pakes 1, 10n-6w-7, fsg 1400 ft. Jetter Oil Co.'s Long 1, 9n-6w-1, dr 3000 ft. Rex Oil Co.'s Newland 1, 12n-8w-2, t so 3063 ft.

SAGINAW COUNTY—King Drilling Co.'s Kube 1, 12n-2e-31, Traverse 2630 ft, sg&o 2735 ft, flowed 1000 barrels oil in two days, now testing, bottom hole 2738 ft.

MISSISSIPPI

FRANKLIN COUNTY—Fred E. Courson et al's Homochitto Lbr. Co. 1, se sw 31-6n-2e, dr 2416 ft.

GEORGE COUNTY—United Gas Pub. Serv. Co.'s Williams Unit 1, sw sw 6-1s-5w, dr 4234 ft.

LA FAYETTE COUNTY—W. L. Stewart et al's Russell 1, 9-10s-1w, sd for heavier rig 2450 ft, hd black shale.

RANKIN COUNTY — Cleve Love et al's Mills 1, ne se sw 7-5n-2e, sd 2450 ft.

WARREN COUNTY—Harry W. Elliott's R. L. Parker 2, 14-14n-1e, elev 80 ft, 7-in csg 830 ft, 4½ in csg 1600 ft, making est ¼ mil to 1 mil ft gas daily with 4 to 8 bbls water, installing separator to use gas drill offset, td 1690 ft; R. L. Parker 3, 14-14n-1e, spd 10-in csg 140 ft, dr 1500 ft.

WASHINGTON COUNTY — Mid-Continent Development's Lee 1, 33-15n-8w, co, td 2100 ft.

WINSTON COUNTY—Jack Vale's Moody 1, sw nw sw 3-13n-14e, elev 540 ft, 6⅝ in csg 2216 ft, sd 2230 ft.

MONTANA

CARBON COUNTY—Bailey Round Butte Oil Co. 1, ne se 3-6w-22e, dr 1500 ft.

FERGUS COUNTY—Judith Operation Co., Government 1, csw sw 26-22n-17e, dr at 530 ft. Emmons et al 1, ne ne 6-20n-17e, dr 2206 ft.

GALLATIN COUNTY—Montana Gas & Petroleum Co., Tice 1, ne ne ne 28-1n-2w, dr 2518 ft.

ROSEBUD COUNTY—Birney Oil & Gas Co. 1, sw sw sw 6-6s-42e, dr 563 ft.

STILLWATER COUNTY—Continental Oil Co. Parker 1, se sw 25-5s-17e, dr 2990 ft.

NEW MEXICO

EDDY COUNTY—Geo. F. Getty Oil Co.'s Andrew Dooley 7, swc nw 24-20s-29e, elev 3309 ft, coring black lime 6525 ft.

LEA COUNTY—Amerada's M. J. Byrd 1, c nw nw 12-20s-36e, Monument area, lcn. Barnsdall Oil Co.'s A. Cooper 1, c ne ne 12-20s-36e, Monument area, elev 3567 ft, top anhydrite 935 ft, dr 3665 ft. Gypsy Oil Co.'s B. V. Culp 2, c sw nw 19-19s-37e, Monument area, elev 3709 ft, dr 3175 ft; State-Graham-South 1, c se se 2-20s-36e, elev 3579 ft, est 100,000,000 ft air at 1847 ft, re-cem cas 2353 ft; Steve B. Taylor 1, c se ne 24-18s-38e, 2¾ mi ne Hobbs field, elev 3613 ft, top anhydrite 1950 ft, coring brown lime 3580 ft. Jeffers Oil Co.'s C. Britt-Conoco 1, c se nw 7-20s-37e, Monument area, elev 3554 ft, top anhydrite 970 ft, salt series 1115-2270 ft, dr 3545 ft. Harry Leonard et al's C. W. Justis 1, swc nw nw 20-25s-37e, elev 3067 ft, carrying 2000 ft salt w in hole, dr 3475 ft. Maljamar O&G Corp.'s Baish 5, c sw ne 21-17s-32e, Maljamar area, elev 4036 ft rig. N. G. Penrose & Rowan Drl. Co.'s Will Cary-Humble 1, c nw sw 22-22s-37e, dr 445 ft. Phillips Pet. Co.-Pure Oil Co.'s Woolworth 1, lse 2, c ne nw 33-24s-37e, 3½ mi e of Cooper field, elev 3265 ft, top brown lime 2772 ft, sd for repairs, td 3951 ft; Woolworth 1, lse 4, c se sw 8-25s-37e, elev 3131 ft, dr 2865 ft. Repollo Oil Co.'s M. J. Byrd 1, nec nw ne 11-20s-36e, Monument area, dr 2735 ft. Republic Prod. Co.'s Selby-Maveety 1, c se sw 35-19s-36e, elev 3614 ft, dr 3250 ft. Shell's State 1-C, c ne ne 24-19s-36e, Monument area, sp. Skelly Oil Co. et al's B. F. Harrison 1, c nw sw 5-23s-37e, top anhydrite 1190 ft, top salt 1280 ft, dr 1965 ft. Skelly Oil Co.'s State-Monument 1, c se se 15-19s-36e, rig. Sun Oil Co.'s W. B. Maveety 3, c se ne 35-19s-36e, elev 3611 ft, top anhydrite 1040 ft, cem 7-in cas 3770 ft, td 3775 ft. Superior Oil Co. (Cal's) State 2-A, c nw ne 2-20s-36e, elev 3603 ft, dr 3740 ft. The Texas Co.'s State 1-E, c sw sw 1-20s-36e, elev 3577 ft, gauged 100,000,000 ft air, td 1815 ft, cem 7-in cas 2540 ft; State 1-F, c ne se 24-19s-36e, cem 13-in cas 269 ft; H. T. Mattern 1, c nw sw 20-19s-37e, mim; J. M. Dean-Pure 1, c se sw 28-22s-36e, dk. Sam K. Vierson & Brown's W. D. Robinson 1, c nw se 14-11s-32e, elev 4355 ft, top anhydrite (est.) 1330 ft, top broken salt 1570 ft, dr salt 1835 ft. Tide Water's State 1, sec n½ 14-18s-37e, elev 3689 ft, td 4368 ft, used 2000 gals. acid solution, now co.

BERNALILLO COUNTY — Norins Realty Co., Gallegas Grant 1, cnw nw 19-11n-4e, sd.

CHAVES COUNTY—Spanish Grants Oil Co. Fee 1, se sw 8-8s-23e, sd. John Tannehill's Campbell 1, ne se 1-11s-25e, dr at 1190 ft. Worman Oil Trust Weldon-Hoar 1, nw se 9-14s-25e, sdo.

GUADALUPE COUNTY—Anton Chico Development Co. Fee 2, nw ne sw 20-9n-17e, sd.

SANDOVAL COUNTY—Continental Oil Co. Bar Cattle Co. 1, se 2-13n-4w, dr 4602 ft.

TORRENCE COUNTY—48 Petroleum Co. Greenfield 1, cnw sw 17-9-8e, dr 900 ft.

UNION COUNTY—Quaker State Oil Co. Zurich 1, cn¼ sw sw 2-21s-34e, lcn.

OKLAHOMA

ALFALFA COUNTY—Tex-O-Kan's Acre 1, csw ne 14-24n-11w, dr 6587 ft.

ATOKA COUNTY—Vierson et al's Williams 1, ne sw nw 34-2s-10e, co 2236 ft. Garner et al's Garner 1, ne nw ne 27-1n-15e, sd 825 ft. Mid-Continent Pet. Corp. et al's Fulton 1, sw sw sw 19-1s-12e, sd 3005 ft. Phelps & Coats et al's Fidelity Life Ins. 1, se sw nw 23-1s-12e, sd 47 ft. Price's Aetna Life Ins. 1-A, nw sw ne 10-1n-13e, dr 1145 ft.

BEAVER COUNTY—Anderson-Kerr et al's School 1, csw se 36-5n-26 ECM, dr 2665 ft.

BECKHAM COUNTY—Martin's Hood 1, cne nw 7-8n-23w, dr 1560 ft.

BRYAN COUNTY—Selby Oil & Gas Co.'s Gilbert 2, sw ne sw 25-8s-7e, lcn.

CADDO COUNTY—Denver P & R Co.'s Sah-Cam 1, cse se 33-10n-10w, dr by 7300 ft. Turner et al's Sapin 1, ne ne sw 1-5n-11w, td 3166 ft. Lee et al's Horton 1, ne ne ne 9-6n-13w, running 10-in csg 925 ft.

CARTER COUNTY—Carter Oil Co.'s Humble-Williams 1, sw ne sw 27-2s-3w, td 8088 ft. Louis Sikes' Byrd 1, sw se sw 4-2s-2w, sd 20 ft.

CLEVELAND COUNTY—Hall-Brisco Inc.'s Fant 1, sw sw ne 27-10n-2w, td 6830 ft, to cement back to 5570 ft. Sinclair Prairie Oil Co. et al's Lizzie Hasmann 1, sw se sw 21-10n-2w, td 7331 ft.

COAL COUNTY—Carter Oil Co. et al's Thompson 1, csl ne nw 34-2n-9e, td 5985 ft. Southern Oil Co.'s Fish 1, sw sw sw 6-1s-8e, ru mach.

COMANCHE COUNTY—Stevens' Green 1, se se sw 2-1n-13w, fsg 1893 ft. Imbodin et al's Smith 1, sw sw sw 12-2n-10w, sd 53 ft. George Pace et al's Spencer 1, sw sw sw 21-3n-10w, materials on ground. John Nicholas' Household 1, ne ne sw 8-2n-10w, dr 363 ft. Imbodin et al's Woods 1, se sw se 27-2n-10w, pits.

GARFIELD COUNTY—Sunray Oil Co.'s Shanks 1, sw sw ne 10-20n-4w, td 3815 ft. Herndon Drlg. Co. et al's Whitaker 1, se se se 27-24n-3w, sd 3350 ft. McBride et al's Gage 1, se se ne 27-22n-3w, running 10-in csg 610 ft.

GARVIN COUNTY—Suggett & McElreath's Allie Camp 1, ne ne se 22-4n-1w, td 211 ft. Charles Carter's Wood 1, nw sw se 5-4n-3e, D & A.

GRADY COUNTY—Sayre Oil Co.'s Anderson 1, ne ne se 36-4n-6w, sg 1800 to 1802 ft, running core bbl.

GRANT COUNTY—Stanolind's Crouse 1, cne sw 29-25n-8w, shot off pipe 4443 ft, flowed mud & so, to recondition and test. Shell Pet Corp.'s Foster 1, nw nw se 30-27n-8w, dr 5664 ft. Wentz et al's Wirtz 1, se se nw 22-28n-4w, whipstock 3700 ft. Morton's Warren 1, se se nw 19-29n-4e, dr 450 ft. Yingling et al's Allen 1, sw sw se 36-26n-4w, rig.

HUGHES COUNTY—Sivils et al's Montgomery 1, nw sw nw 7-9n-8e, dr 1075 ft. Freeman et al's Kite 1-A, nw nw ne 8-6n-10e, td 700 ft, D & A.

JACKSON COUNTY—Associated Oil Co.'s Harrell 1-A, ne ne se 13-1s-21w, sd 1360 ft. Triangle's Fox 1, se sw nw 11-3n-20w, td 632 ft, D & A.

JEFFERSON COUNTY—Barrett's Mose 1, cn¼ nw sw 9-6s-7w, dr 480 ft.

JOHNSTON COUNTY — Equitable O&G Co.s' Bellsey 1, ne ne sw 12-2s-4e, dr 275 ft.

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KILGORE-TAFT-LOS ANGELES

Neff & Godfrey's Merrell 1, nw se se 28-4s-6e, dr 20 ft. Moore & Wirick's Westheimer & Daube 1, se nw ne 19-3s-4e, lcn.

KAY COUNTY—Robinson Drlg. Co. et al's Hermes 1, sw sw nw 6-26n-4e, dr 3653 ft. Lewis Prod. Co.'s Hollenback 1, se ne se 18-27n-2e, td 3615 ft, abd.

KIOWA COUNTY—Connelly's McCord 1, nw se ne 15-1n-17w, dr 648 ft. Rogan Oil Co.'s King 1, se se nw 11-6n-18w, spd.

LE FLORE COUNTY—McGraw et al's Tidwell 1, cnw se 17-3n-22e, wocs.

LINCOLN COUNTY—Garfield Buell et al's Seward 1, ne nw se 25-14n-3e, dr 1870 ft. Cozart's Sekovaty 1, ne ne nw 14-14n-3e, cellar & pits. Fred McDuff's Jacob 1, ne ne se 10-15n-5e, cellar and pits. Carlock's Young 1, cn½ nw nw 23-15n-5e, abd.

LOGAN COUNTY — Stanolind-Amerada & Eason's Gragg 1, sw sw ne 20-18n-4w, dr by 5456 ft. Texas Co.'s Wood 1, sw sw ne 34-15n-5w, dr ahead.

LOVE COUNTY—Sinclair Prairie Oil Co.'s Stockton 1, se se sw 26-6s-2w, td 5831 ft, prep to dd. Amerada & Stanolind's Westheimer & Daube 1, sw se sw 27-6s-2e, br.

MARSHALL COUNTY—Smith's Chestnut 1, ne ne ne 23-8s-5e, sd 275 ft.

OKFUSKEE COUNTY—Sunray's Culla 1, ne sw ne 13-12n-8e, dr 3996 ft. Sherry et al's Washington 1, sw sw ne 21-13n-7e, rur.

OKLAHOMA COUNTY — Sinclair Prairie Oil Co.'s Corbett 1, ne nw ne 17-13n-3w, to acidize. Sinclair Prairie & Slick-Urschel's Kratky 1, se se ne 19-13n-3w, dr 5655 ft.

OSAGE COUNTY—J. A. Freeburg et al's 1, ne ne se 1-25n-6e, dr 2953 ft. Texas Co.'s Osage 1, sw sw se 22-24n-6e, sd 1775 ft.

PITTSBURG COUNTY — Vaughn et al's Chunn 1-B, ne se nw 29-4n-14e, td 671 ft.

PONTOTOC COUNTY — Continental's McCarthy 1, csw nw 12-1n-7e, fsg 4446 ft. Gypsy Oil Co.'s Emry 1, sw sw ne 15-2n-6e, dr 1584 ft. Ada Pet. Co.'s Simmon 1, cwl nw nw 8-3n-6e, coring 3935 ft. Paramount Oil Co.'s Weatherly 1, ne sw nw 24-1n-7e, lcn. McBride et al's Dyer 1, se se nw 25-4n-4e, lcn. Southern Oil Co.'s Perry 1, sw sw nw 11-4n-6e, dr 2390 ft. Phillip Boyle's McCracken 1, ne nw nw 31-5n-4e, td 2170 ft, pb 2167 ft, D & A. Cooper's Chandler 1, ne se sw 4-5n-6e, td 1780 ft, D & A.

SEMINOLE COUNTY — Deep Rock Oil Corp.'s Robert 1, sw nw nw 32-9n-8e, dr 2760 ft. Verser-Clay et al's Thomas 1, ne se nw 1-6n-6e, td 3030 ft, D & A.

STEPHENS COUNTY—Franklin & Duncan's Woolsey 1, nw nw se 10-3s-6w, sd 1050 ft. Prince Bros.' Williams 1-A, sw sw se 19-2n-8w, dr 1724 ft. Shasta Oil Co.'s Fuqua 1, ne nw nw 13-1s-7w, 33 ft 10-in surface pipe, woc.

TILLMAN COUNTY — Gypsy Oil Co.'s Schenck 1, se nw se 31-1s-16w, dr 1090 ft.

EAST TEXAS

ANDERSON COUNTY — Tide Water & Texas Seaboard's N. N. Wills 21-A, Cayuga field Trinity test, elev 308 ft, cem 7-in cas 8750 ft, tested hot salt w at 8867 ft, pb fr Basal Trinity water sand at 9082 ft, to 8734 ft, perforated cas and tested sw, pb to 8500 ft, testing; Shaw-Cern 2 (1216-ac), Daniel Parker sur, Long Lake area, elev 298 ft, Pecan chalk 3555-3618 ft, Austin chalk 4619-4886 ft, top Woodbine 5138 ft, td 5346 ft, cem 7-in cas 5344 ft, sd to perforate pipe.

BOWIE COUNTY—Tex-Ark Oil Co.'s J. B. Hamilton 1 (40-ac), Jessie Milam sur, elev 272 ft, sd 1120 ft. Woodley & Bentley's J. D. Lumpkin 1 (245-ac), John McDermott sur, 1¼ mi sw of Dalby Springs, sp and sd.

CAMP COUNTY—E. J. Moran, G. E. & Ray Hubbard's W. M. Mitchell 1 (100-ac) L. Rose sur, 1½ mi n of Newsome, rig. E. R. Smith's J. M. Jordan 1, B. Carver sur, 1 mi s of Newsome, elev 438 ft, Pecan chalk 2490-2725 ft, Gober chalk 2975-3014 ft, show black oil in Sub-Clarksville 3857-62 ft, coring 3865 ft.

CASS COUNTY—American Liberty Oil Co.'s J. B. Rogers 1, C. M. Robinson sur, Rodessa area, elev 238 ft, rig. Stanley A. Thompson et al's Coy Dunbar 1 (550-ac), Wm. King sur, 6 mi s Hughes Springs, sp. United Production Corp.'s Lake Holt (Thurmond Unit) 1 (6876-ac), John H. Coleman sur, w edge Rodessa field, cem 9⅝-in cas 2072 ft, td 2100 ft.

CHEROKEE COUNTY — Jacksonville O&G Corp.'s H. B. Henderson 1 (40-ac), J. Pineda sur, 5 mi ne Jacksonville, elev 409 ft, sd 2200 ft.

COLLINS COUNTY — Port Bolivar O&R Co.'s Clarkston-During 1-A, Wm. Creager sur, elev 722 ft, base Austin chalk 368 ft, top Trinity series 2110 ft, dr 2880 ft; J. Shirley 1, James Sorrell sur, elev 684 ft, base Austin chalk 350 ft, Washita lime 1762-63 ft, sd 1963 ft.

ELLIS COUNTY—Beasley O&G Co.'s Mrs. Erie Roller 1 (200-ac), Ruidoso Irrigation Co. sur, 1 mi s of Crisp, sp and sd.

FREESTONE COUNTY—J. A. Hoover et al's W. W. McFall 1 (65-ac), S. Garrison sur, A-749, 4 mi se Wortham, top broken Austin chalk 2612 ft, top hard chalk 2620 to 3020 ft, top Woodbine 3501 ft, tested sw on dst 3472-3512 ft, to dd. J. J. Leighton et al's G. Cochran 1 (100-ac), D. Bullock sur, 6 mi s Teague, mim.

GRAYSON COUNTY—Olson Drl. Co. et al's Southwestern Life Insurance Co. 1 (160-ac), J. C. Jamison sur A-865, 3 mi n Pottsboro, elev 767 ft, pb fr 2298 to 1600 ft, acct crooked hole, re-drl 2100 ft. Port Bolivar O&R Co.'s Creed Taylor 1, J. Fitzhugh sur, 3 mi se Gunter dr 1460 ft.

HOUSTON COUNTY—Housh, Thompson & Benzi Oil Co.'s Houston Co. Timber Co. 1, I&GN Ry. sur No. 31, A-599, 2 mi n Kennard, dr 2380 ft. A. H. Smith et al's Smith Bros. 1, J. H. Cummings sur, A-27, 2 mi sw Porter Springs, lcn.

HUNT COUNTY—J. F. Morrissey Co. Inc's P. B. Fry 1-A, (146-ac), Calloway Davis sur, 7 mi se Ladonia, elev 561 ft, top Paluxy 3605 ft, top Red Beds 3806 ft, junked and abd, td 4442 ft.

KAUFMAN COUNTY—C. C. Pearson et al (was Murray & Emerson's) G. W. Martin 1 (100-ac), W.F.C. Butler sur, elev 429 ft, top Austin chalk 1940 ft, sd 2075 ft.

HENDERSON COUNTY—C. & G. Oil Co.'s Sterrett 1, M. Strade sur, Twin Creek shallow test, sp.

LAMAR COUNTY—North Texas Synd. (E. T. Bradley, Tr.'s) Alice Wright (Reese) 1 (163.3-ac), Alfred Moore sur, 2 mi ne Caviness, testing 2515 ft. Texas Gulf Pet. Co.'s A. L. Darnell 1 (40-ac), H. L. Williams sur, 4 mi ne Paris, elev 544 ft, Austin chalk 816-864 ft, top Woodbine 948 ft, top Red Beds 1002 ft, coring 2435 ft. L. W. Dennis et al's W. C. Clark 1, G. H. Hall sur, A-402, 3 mi ne Reno, lcn. L. W. Dennis, Tr, et al's Effie Lawrence 1, T. B. Roundtree sur, 2 mi ne Blossom, dk.

LEON COUNTY—Tide Water & Texas Seaboard's M. K. Carter 1-A (458.13-ac), Simon Sanchez sur No. 7, Long Lake area, elev 246 ft, dr 1160 ft.

LIMESTONE COUNTY—David J. Crawford et al's Mary Ward 1 (28-ac), Pedro Varella sur, dr 1010 ft.

MORRIS COUNTY—J. N. Buchanan et al's P. M. Staggers 1, J. D. Nelson sur, elev 363 ft, sd 4327 ft. C. M. "Dad" Joiner et al's fee 1, Wm. Coffey sur, lcn. Steve J. Rotondi et al's W. & C. Smith 1 (50-ac), M. C. Vela sur, 2½ mi sw of Naples, sd 1760 ft. B. L. Watson et al's E. Hall 1 (177-ac), Levi Jordan sur, 5 mi ne Daingerfield, top sand 4175 ft, elev 260 ft, sd 4248 ft.

NAVARRO COUNTY—L. N. McCulloch et al's Berry Bros. 1 (35-ac), W. W. Moss sur, Austin chalk 751-1060 ft, sd 1490 ft.

RED RIVER COUNTY—J. S. Abercrombie Co.-Harrison Oil Co.'s C. A. Rose 1, Mary Smith sur, 3 mi n Clarksville, dr Red Beds 1370 ft. W. G. Clark & R. H. Chew's J. F. Brooks 1 (321-ac), Ben Gooch sur, ½ mi s Bagswell, elev 484 ft, dk. Don F. Cleary et al's O. Mowery 1 (20-ac), J. Bowerman sur, 10 mi n Clarksville, dr 550 ft. Garson & Seigel's W. T. Morris 1 (351-ac), Joseph Guest sur, 1 mi s Detroit, sp and sd.

RUSK COUNTY — J. W. Shipman et al's Citizens Nat'l Bank 1-A (125-ac), J. J. Y'Barbo sur, 4 mi ne Henderson, elev 432 ft, dr 300 ft.

VAN ZANDT COUNTY—J. H. "Bill" Gilliam et al's E. S. Marten 1 (416-ac), Jas Hamilton sur A-407, 3 mi ne Wills Point, lcn. American-Liberty Oil Co.-Pioneer Explo. Co.'s E. N. Sides (Spruce) 1 (23-ac), J. Denman sur, 8 mi sw Canton, elev 541 ft, top Taylor Marl 2040 ft, Pecan chalk 2652-2813 ft, sd for w 3277 ft.

WOOD COUNTY—Westgate Oil Co.'s West Lake Club 1 (428.6-ac), M. Rentararez sur, 14 mi e of Mineola, lcn.

HARRISON COUNTY — Adams & Bird's Washburn Lbr. Co. 1, F. Jordan sur, dk & mir. Itex Oil Co.'s T. J. Taylor 1, W. H. Payne sur, elev 249 ft arr perf csg for another test, td 5853 ft.

PANOLA COUNTY—Steve Blazek's Robt. Johnson 1, J. Johnson sur, 6⅝-in csg 1960 ft fsg for tub td 1983 ft. Modisett & Jolly's Loyd Thompson 1, D. McDonald sur, rur. McAneny & Flinchbaugh's G. H. McCormick 1, Jas. P. McAdams sur, elev 381 ft base Pecan Gap 2437 ft claim 10½ ft saturated sand, 7-in csg 2654 ft wocs, td 2674 ft.

SHELBY COUNTY—J. A. Reynolds' O. H. Polley 1, Wm. Whistler sur, mim.

WEST TEXAS

ANDREWS COUNTY—Fuhrman Pet. Corp.'s W. T. Ford 3, near c se¼ sec 16, blk A-43, PSL sur, rotary rig. Humble's R. M. Means 6, nwc sec 4, blk C-45, PSL sur, elev 3179 ft, top anhydrite 1880 ft, top salt 1938 ft, top Yates sand 3015 ft, cem 6⅝-in csg 3392 ft, td 3456 ft; J. S. Means 4, c se ne sec 12, blk A-35, elev 3157 ft, pb fr 4555 to lime pay at 4220-4542 ft, completed 557 bbls daily; J. S. Means 5, c ne se sec 9, blk A-35, mim. Lou Stogner et al's C. C. George-TP Coal & Oil Co. 1, c se se sec 25, blk A-22, PSL sur, elev 3253 ft, top anhydrite 1853 ft, salt series 1930-2775 ft, top Yates sand 2930 ft, so&g 4330-35 ft and 4812-23 ft, sdo (no w) 5014 ft, to dd. Wahlenmaier Pet. Corp.-York & Harper, Inc.'s B. E. Cox-Humble 1, c nw¼ sec 8, blk A-33, PSL sur, elev 3277 ft, top anhydrite 1955 ft, top salt 2000 ft, dry and abd 4812 ft.

BREWSTER COUNTY — Floyd C. Dodson et al's Texas American Synd. 1, c ne ne sec 66, blk 10, GH&SA Ry. sur, deep test, jkd at 1715 ft, to skid rig. K. H. King & C. R. Franklin's A. S. Gage 1, nw¼ sec 138, blk B-22, GH&SA Ry. sur, dr 1540 ft. G. H. Storey et al's Jim P. Wilson 1, c se nw sec 3, blk 212, T&St. L. Ry. sur, sd 1875 ft.

COCHRAN COUNTY — Humble's C. C. Slaughter 1, League 135, Armstrong Co. S.L. sur, top anhydrite 2307 ft, top salt 2348 ft, dr anhydrite 3520 ft. Thomas & Holstein's C. A. Slaughter 1, lcn.

COKE COUNTY—C. D. Hagerty et al's S. W. Gaston 1, Jos. Young sur No. 11, elev 2022 ft, cem cave, td 3250 ft.

CONCHO COUNTY — Maverick Oil Co.'s Jim Rice 1, sec 18, H&TC Ry. sur, elev 1887

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ft, sd 170 ft. John W. Westbrook Co.'s C. C. Ledbetter 1, sec 2, A-1673, blk 65, H&TC Ry. sur, elev 2000 ft, sd 580 ft.

CRANE COUNTY—Gulf's W. N. Waddell et al 1, c nw nw sec 4, blk B-27, PSL sur, elev 2554 ft, top salt 510 ft, top Simpson (middle Ordovician) 6060 ft, dr lime 6240 ft. John I. Moore et al's T. C. Barnsley 1, sec 42, blk 32, PSL sur, lcn.

CROCKETT COUNTY—E. C. Leslie & Hiller's J. S. Todd 1, sec ne ne sec 26, blk "WX", GC&SF Ry. sur, sd 740 ft. John I. Moore et al's A. C. Hoover 1, sec sec 4, blk "FF", B&B sur, sp and sd.

CULBERSON COUNTY—Anderson-Prichard Prod. Corp.'s H. A. Borders 1, nw¼ sec 34, blk 249, GB&CNG Ry. sur, elev 4565 ft, dr 2180 ft.

JEFF DAVIS COUNTY—C. M. "Dad" Joiner et al's Jones-Coffield 1, ne¼ sec 8, blk 3, H&TC Ry. sur, sd for rotary to sdtr junk, td 1610 ft.

ECTOR COUNTY—Conoco's L. E. Wight 1, nec sw¼ sec 21, blk 43, T&P Ry. sur, T-1-S, elev 3037 ft, dry and abd 4457 ft. W. H. Dunning et al's C. Scharbauer 1, sec sw¼ sec 33, blk 44, T&P Ry. sur, T-1-N, elev 3159 ft, set 8⅝-in cas 1547 ft. Gulf's C. A. Goldsmith-Sharbauer 2, sec ne¼ sec 15, blk 44, T&P Ry. sur, T-1-S, elev 3100 ft, top anhydrite 1360 ft, salt 1390-2475 ft, top Yates 2590 ft, increased to 11,433,000 ft sweet gas at 3648 ft, dr 3675 ft; Goldsmith-Scharbauer 3, sec sec 22, blk 44, T-1-S, dr 3230 ft. Sun & Atlantic's O. B. Holt 1-B, c nw sw sec 6, blk 43, T&P Ry. sur, T-1-N, elev 3136 ft, top anhydrite 1685 ft, salt series 1705-2852 ft, top lime 4042 ft, cem 7-in csg 4050 ft. Westbrook Oil Corp.'s T. B. Yarbrough-Gulf 1, nwc sec 26, blk B-14, PSL sur, elev 2824 ft, sdo 4004 ft, may dd to water. Sun Oil Co.'s W. P. Edwards 1, nec sec 20, blk 43, T&P Ry. sur, T-3-S, elev 3029 ft, top salt 1775 ft, dr 2070 ft. York & Harper, Inc.-Barnsdall Oil Co.'s E. F. Foster 1, c se se sec 13, blk 43, T&P Ry. Co. sur, T-2-S, dr 910 ft.

EL PASO COUNTY—A. M. Blume et al's F. W. Cook 1, ne½ sec 321, S.F. No. 8134, sd 560 ft. Tri-State Oil Co.'s Chas. & L. M. Kinkel 1, nec sec 237, S.F. No. 7232, sd 1240 ft.

FISHER COUNTY—L. A. Daniel & J. B. Rhoads' Mrs. J. R. Nickless 1, nwc 81-ac lse, G. W. Lawrence sur, sd 270 ft. Tide Water-Merry Bros. & Perini, Inc.'s M. Howard 2, nec sw ne sec 180, blk 2, H&TC Ry. sur, elev 1853 ft, dr 2510 ft; H. Newman 1, ne¼ sec 2¼, John Rodman sur, elev 1997 ft, dr 2990 ft.

GAINES COUNTY—E. M. Wahlenmaier-York & Harper, Inc.'s E. H. Jones-Humble 1, c sw sw sec 414, blk "G", CCSD & RGNG Ry. sur, sp and sd. W. T. Walsh & Harry Adams Corp.'s S. J. Averitt 1, nec ne ne sec 228, blk "G", W. T. Ry. sur, elev 3322 ft, top anhydrite 1969 ft, dr 2010 ft.

GARZA COUNTY—Dobbs Oil Co.'s W. E. Connell 1, swc nw¼ sec 75, blk 5, GH&H Ry. sur, elev 2414 ft, top lime 2025 ft, sd for cas 2405 ft.

GLASSCOCK COUNTY — Loffland Bros., John I. Moore et al's L. S. McDowell 1, c se ne sec 22, blk 34, T&P Ry. sur, T-2-S, elev 2534 ft, top lime 2137 ft, top Crinoidal lime 9471 ft, td 10,115 ft, used 6000 gals acid, flows by heads occasionally. John I. Moore et al's Mrs. Erie Miller 1, c se se sec 35, blk 34, T&P Ry. sur, T-5-S, elev 2724 ft, top lime 2473 ft, trace oil 2890-96 ft, dry and abd in sul w 3070 ft.

TOM GREEN COUNTY—Eugene Mays et al's Ike Funk 1, c nw sw sec 38, blk 5, H&TC Ry. sur, dr 910 ft. Spinner Oil Co. (was Adkins Bros.') Bennett Reed 1, blk 39, Mayson-Perry sur, sd 580 ft. Twin Oil Co.'s W. E. Green 1, Levi P. Moore sur No. 169½, elev 1892 ft, sd 335 ft.

HOWARD COUNTY—TP Coal & Oil Co.'s E. W. Douthitt 1, sec sw¼ sec 116, blk 29, W&NW Ry. sur, dr 840 ft.

JONES COUNTY — Bridwell Oil Co.-L. Fikes' J. W. Jennings 2, elev 1593 ft, flowed 243 bbls 24 hrs 7 percent water sand pay 2051-47 ft; Jennings 3, sp and sd; Jennings 4, sp; Jennings 1-A, machine. Anderson & Kerr Pet. Co.'s J. W. Jennings 1, nwc s½ se sec 1, blk 1, I&GN sur, dr 1910 ft. T. B. Cochran Drl. Co.'s E. T. George 1 (26 2/3-ac), sec 25, HT&B Ry. sur, mim. W. D. Conway et al's Lee Cauthen 1, swc 80-ac sec 24, HT&B Ry. sur, co 1620 ft. John M. Cooper et al's W. E. Robinson 1, c se se blk 8, Louisa Matthews sur No. 7, lcn abd. Tip DeArman et al's J. H. Huffaker 1, swc se¼ sec 25, D&D sur, dr 1945 ft. Herrington & Hodges' Mrs. C. T. Cowsert 1, swc sec 42, Orphan Asylum sur, sp and sd. Harry Hines et al's A. M. McNair 1, swc lot 3, sec 5, Mary Lawson sur, lcn. Thos. D. Humphrey and Guiberson's Jennings 1, dr 1030 ft; Swenson 1, dr 1165 ft. Tom B. Medders et al's J. E. Manley 1, near c se¼ sec 35, blk 14, T&P Ry. sur, dr 1410 ft. Reliance Oil & Roy Co.'s Ida Crow 1, se¼ sec 9, D&D sur, lcn. F. E. Shaheen Oil Co.'s P. O. Sandlin 1, c sub-div 8, Mrs. L. Matthews sur, elev 1537.2 ft, dd fr 1929 ft, co. Sheldon Bros. et al's Joe Dillard 1, se¼ sec 2, blk 17, T&P Ry. sur, lcn. Ungren & Frazier's J. W. Jennings 1, completed, 420 bbls via tubing, sand 2036-47 ft.

LOVING COUNTY—Mason Oil Co.'s M. Kyle 1, c nw se sec 22, blk 55, T&P Ry. sur, tsp 1, elev 3001 ft, top salt 1585 ft, dr 3145 ft. Porter Rankin et al's W. D. Johnson 1, nw¼ sec 12, blk 57, T&P Ry. sur, tsp 1, dr 2515 ft.

MARTIN COUNTY—Wm. Hix et al's O. B. Holt 1 (5000-ac), League 319, Garza County School Land sur, lcn.

MITCHELL COUNTY—Lockhart & Co.'s W. C. Berry 1, nec nw¼ sec 80, blk 97, H&TC Ry. sur, elev 2232 ft, pull big pipe, td 1485 ft.

NOLAN COUNTY—N. B. Hall, A. Glenn et al's Georgia Tech 1, sw¼ sec 89, blk 24, T&P Ry. sur, elev 2330 ft, sd 200 ft.

PECOS COUNTY—Gulf's White-Baker 7, nec sec 15, blk "Z", T.C. Ry. sur, top salt 775 ft, dry and abd in sul water 1565-81 ft. C. W. Richards et al's W. Courtney-Pryor 4, c nw nw sec 78, blk "OW", T. M. Ry. sur, dr 965 ft. Shamrock O&G Co.'s J. L. Nutt-Phillips Pet. Co. 1, sec 12, blk 125, T&ST.L Ry. sur, lcn. Tex-Mex Pet. Corp.'s E. T. Brandenburg 1, sec se n½ sec 42, blk 8, H&GN Ry. sur, dr 1020 ft. Trans-Texas Oil Co.'s C. M. Caldwell 1, sec sec 27, blk 50, T&P Ry. sur, tsp 9, so&g 3075 ft, tested 1 bailer oil in 48 hrs at 3995-4000 ft, dr 4165 ft; Popham Land & Cattle Co. 1, sw¼ sec 235, blk 2, GH&SA Ry. sur, mim.

REAGAN COUNTY—Dobbs Oil Co.'s W. E. Friend 2, nw sw sec 3, Wm. Allen sur, lcn. F. Oyster, R. R. Rhodes & Bahan's M. F. Reed 1, c nw¼ sec 31, blk 35, T&P sur, T-5-S, dr 300 ft. Sun Oil Co.'s L. Wilson Young 1, swc ne¼ sec 1, GC&SF Ry. sur A-170, elev 2677 ft, top salt 1140 ft, base salt 1485 ft, top lime 2340 ft, lime pay 2380-2416 ft, td 2444 ft, est 10 bbls 35° oil daily after shot 300 qts nitro, sd for acid.

REEVES COUNTY—R. W. Clark & Washington Oil Co.'s Radford 1, sec 39, blk 56, PSL sur, elev 3169 ft, sd 502 ft. Grisham-Hunter Corp.'s TP Land Trust Co.-Kloh 1, c sw¼ sec 27, blk 57, T&P Ry. sur, tsp 2, elev 3020 ft, top anhydrite 350 ft, dr 1490 ft. Kenneth Slack & L. M. White's Francis Reeves 1, c se nw sec 20, blk 56, PSL sur, elev 3220 ft, so&g 2944-58 ft, top Deleware lime 3126-64 ft, pb fr sul w 3206 ft shot.

SCHLEICHER COUNTY—J. M. Cooper et

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al's Bert Page 1, near c nw¼ sec 40, blk "L", GH&SA sur, elev 2270 ft, pb from sul w 6257 ft to 5560 ft, used 3000 gals acid and increased gas, then used 8000 gals acid, making gas spray oil. Steve D. Hunter et al's J. A. Whitten 1, nec sec 34, blk "LL", lcn. W. C. Proctor, J. D. Wesner et al's Judkins-Spencer (Pure) 1-A, c sw¼ sec 4, GC&SF Ry. sur, blk V-28, or Hooper-Wade sur, blk "A", sd 2205 ft.

SCURRY COUNTY — Coffield & Guthrie, Inc.'s W. A. Wade 1, nwc sec 115, blk 97, H&TC Ry. sur, elev 2306 ft, dr 2230 ft. Magnolia's W. M. Scott 1, swc sec 186, blk 3, H&GN Ry. sur, elev 2341 ft, top lime 1295 ft, dr 3440 ft.

SUTTON COUNTY—Fleetborn Oil Co.-Mid-Continent Pet. Corp. & Paul Teas' G. S. Allison 1, swc sec 49, blk "A", GWT&P Ry. sur, dk.

TAYLOR COUNTY—Brown Eagle Oil Co.'s C. M. Caldwell 1, dr 860 ft. A. S. Hickok et al's C. R. Tittle 1, c nw nw sec 37, blk 19, T&P Ry. sur, sd 2825 ft. H. M. Imholz et al's Mrs. E. E. Sadler 1, (475-ac), sec 31, C. Cole sur, lcn. Skaggs & Brewer's McClure-Young 1, nec s½ sw¼ sec 8, L.A.L. sur, sd 1915 ft.

UPTON COUNTY—Humble's L. W. Pollok-Gulf 1, c sw¼ sec 4, blk "M", E.L.&Ry. sur, Ordovician test, elev 2758 ft, top salt 1670 ft, top Yates sand 2560 ft, cem 8⅝-in cas 8728 ft, top Pennsylvanian lime 10,670 ft, dr 10,775 ft. J. G. McKenzie et al's W.H.&L.M. Taylor 1, sec ne se sec 22, blk B-2, GC&SF sur, sd 630 ft.

WINKLER COUNTY — Crafton Oil Co.-Showers & Moncrief's J. B. Walton-Pure 1, se¼ sec 2, blk B-3, PSL sur, rig; Walton-Pure 2, swc ne¼ sec 1, blk B-3, lcn. Cree & Hoover's J. A. Crow 1, nwc sw¼ sec 14, blk B-5, PSL sur, top anhydrite 940 ft, top salt 1197 ft, top lime 2350 ft, sg 2540-84 ft, dr 3090 ft. Gulf's Keystone 3, nwc ne¼ sec 11, blk B-3, PSL sur, elev 2939 ft, top anhydrite 830 ft, pb fr sul w 3765 to 3415 ft, sd for shot; Keystone 4, nec sec 20, blk B-3, elev 2937 ft, top anhydrite 857 ft, shot 695 qts nitro 3430-3756 ft, pb fr sul w 3784 to 3375 ft, testing; Keystone 6, nwc ne¼ sec 16, blk B-2, elev 2950 ft, top anhydrite 920 ft, shot 770 qts nitro 3276-3676 ft, completed flows 129 bbls net oil daily from lime 3435-3676 ft; Keystone 7, nwc sw¼ sec 14, blk B-2, elev 2954 ft, top anhydrite 880 ft, top salt 1080 ft, shot 555 qts nitro at 3240-3652 ft, pb fr water sand 3712-15 ft; Keystone 8, swc sec 13, blk B-2, elev 2964 ft, top anhydrite 970 ft, shot 870 qts nitro 3350-3865 ft, shot 120 qts nitro 4391-4448 ft, td 4463 ft, sdo; Keystone 9, swc sec 18, blk B-2, elev 2946 ft, top anhydrite 1060 ft, sd 4126 ft. K. D. Oil Co.'s Pink Mitchell 1, nwc s½ ne¼ sec 23, blk B-10, PSL sur, mim. Mascho Oil Co.'s R. M. Evans 1, near sec nw nw sec 46, blk 73, PSL sur, sp and sd; Cowden Cattle Co. 1, c nw¼ sec 8, blk A-56, PSL sur, lcn. Sid Richardson et al's B. F. Jenkins-Humble 1, sec sec 13, blk 77, PSL sur, elev 2963 ft, est 11,000,000 ft gas 3668 ft, dr 3675 ft; J. B. Walton-Pure 2, sec sw¼ sec 1, blk B-3, PSL sur, elev 2954 ft, top lime 2190 ft, dr 3510 ft. Siosi Oil Co.'s J. C. Lovett 1, nec sec 36, blk B-26, PSL sur, pb fr 3130 to 3091 ft, shut in as gasser. Skelly Oil Co.'s J. M. Halley 3, near c of s line ne½ sec 25, blk B-11, PSL sur, elev 2732 ft, pb fr 3855 to 2985 ft and shot 120 qts nitro 2866-2907 ft, sd for acid; J. M. Halley 5, nec nw¼ sec 25, blk B-11, dr 400 ft. Southern, Thurman & Wilgo Oil Co.'s Seth Campbell 1-A, swc se sw sec 18, blk B-3, PSL sur, cem 6⅝-in cas 2275 ft. Sun Oil Co.'s J. A. Crow 1, swc s½ sec 23, blk B-5, PSL sur, dr 645 ft; J. B. Walton 1, nec s½ sec 8, blk B-3, PSL sur, elev 2927 ft, top anhydrite 795 ft, salt series 910-2340 ft, top lime 2386 ft, cem 9⅝-in cas 2394 ft. Westbrook Oil Corp.'s E. E. Brown-Gulf 1, swc ne¼ sec 5, blk B-5, PSL sur, Kermit area, elev 2843 ft, dr 2725 ft.

YOAKUM COUNTY—Honolulu Oil Corp.-C. J. "Red" Davidson's L. P. Bennett-TP Coal & Oil Co. 1, c ne ne sec 678, blk "D", John H. Gibson sur, elev 3557 ft, top anyhdrite 2424 ft, top salt 2535 ft, top Yates sand 3220 ft, cem 7-in cas 4656 ft, sd in lime pay 5090 ft.

SOUTH TEXAS

ATASCOSA COUNTY—R. C. Lee, Trustee's (Atascosa Trust) U. A. Boumch 1, 152-ac tr, blk 10, J. T. Russell survey No. 1222, 3 miles n Poteet, ru.

BANDERA COUNTY—Palm Winn Oil Co.'s R. B. Watson 1, A. Curver sur No. 71, 2 mi n Medina City, lowering casing to 2035 ft. Plateau Oil Co.'s R. G. Garrison 1, sec 506, GC& SF sur, 8 mi sw Medina City, elev 1831 ft df, dr 4525 ft.

BASTROP COUNTY — Batts & Jarmon's Mrs. Mary Harris 1, J. Maximillian sur, N. Dale area, elev 432 ft, df, sd 2885 ft. Marts & Beavens' Scott 1, W. McLaughlin sur, dry and abnd 2645 ft. Joe Mills' W. W. Litton 2, A. Navarro sur, N. Cedar Creek area, dr 2610 ft. Port Isabel Oil & Gas Co.'s Story 1, lot 5, Mark Young Ranch, Reuben Gage sur, dr 810 ft.

BEE COUNTY—Mills Bennett's Mrs. Wm. Rapp 3, C. A. Dugat sur, ab 521, w outpost Dirks field, dry and abnd 4776 ft. Geo. M. Church's Webb-Hearn 1, E. Ryan sur, abt 2000 ft se Church discovery well, Beeville pool, lcn. Worth Oil Co.'s Rutledge 4, A. Hadley sur, patent 364, Rutledge area, lcn. R. J. Worthington et al's S. B. Chestnut 1, B. Q. Hadley sur, 2000 ft se Worth well, lcn.

BEXAR COUNTY—James B. Cunningham et al's D. F. Ridder 1, Baerrera sur, abs 50, 2 mi e McDonna, td 860 ft, pb 550 ft, testing. Fay T. Chew et al's Bonkowski 1, 130-ac tr, sec 9, Jacinto Pena sur, 1½ mi e Adkins, lcn. Dorine Oil Co.'s S. Tudyk 2, blk 4, F. Cardenas sur, 18 mi e San Antonio, td 759 ft, pb 610 ft, set csg 575 ft, fsh, may abnd. Joe Deupree's R. S. Coffey 1-A, F. Rodriquez sur, 7 mi s San Antonio, dr 783 ft. C. J. LeCompte's A. Herbst 1, M. Leal sur, 4 mi s San Antonio, sd 377 ft. McPhee & Briggs' Florence Lamb 1, M. de Luna sur No. 4, 22 mi s San Antonio, sd 2452 ft. Nick Marosis' Joe Florey Est 1, Stephen Jett sur, at Von Ormy townsite, sp. Mid-Tex Prod. Co.'s Walker 1, S. W. Dobie sur No. 79, 10 mi n San Antonio, dry and abnd 2131 ft, slate and schist. Carrol G. Raborn's Claud McCauley 1, Wm. Harris sur No. 52, 4 mi s San Antonio, sd 965 ft. H. B. Starkey's (was Joseph H. Parker) M. McCloskey 1, F. A. Desaque sur, 5 mi nw Somerset, testing, sand and sandy shale 722-79 ft. F. M. Shaver's A. W. Bitter 1, J. M. Baerrera sur, near McDonna, dr 750 ft, showing little oil. Fred Thorman's Sahm 1, Peter N. Hays sur No. 3, 2 mi s of Martinez, dr 200 ft, last rept.

BLANCO COUNTY—R. T. Rowe & W. E. Nixon's Polk Morresey 2, T. H. Webb sur No. 11, 2½ mi e Blanco City, dr 220 ft.

BROOKS COUNTY—United Prod. Co.'s K. J. Hocker 1, Palo Blanco de Maguelles gr., Palo Blanco area, shooting off ds to clear hole 5351 ft. Winfield & Moser's W. Singer 1, se¼, sec 312, nw part of county, dr 820 ft.

CALDWELL COUNTY—Ballard & Whitting's A. G. Bridges 1, S. Seal sur, sd 2204 ft. S. S. Cargill's Damerau 3, Dillard Cooper sur, Branyon area, dr 1250 ft. C. & C. Fuel Oil Co.'s (Clark & Crouch) Jolly 1, Cornelius Crenshaw sur, Larremore area, td 1296 ft, top Edwards lime 1287 ft, 6⅝ in csg set 972 ft, completing. Detroit-Texas Dev. Co.'s W. P. Dunlap 3, S. F. Sanders sur, Dunlap area, sd 2322 ft. J. J. Elam et al's Francis-Brown-Cochran 1, W. F. Young sur, 5 mi e Luling, dk. Port Isabel O&G Co. & H. H. Weinert's M. T. Baker 1, 330 ft swl, 990 ft sel 167-ac tr, G. W. James league, ne McMahon, mir. R. Y. Walker No. 2 Walker Bros. 2, S. Seal sur, lost bailer, 2036 ft, fsh.

CALHOUN COUNTY—Continental Oil Co.'s Am. Nat'l Realty Co (Moody) 2, sec 6, blk C. P. Garcia sur, 9 mi se Seadrift, wocs 7384 ft. Crown Central Pet. Corp.'s Wilson 1, A. Esparza sur, Port Lavaca area, td 6315 ft, dr 3750 ft in sdtr hole. Halliburton Oil Prod. Co.'s D. Burton 4, M. Sanchez sur, Port Lavaca area, td 7460 ft, dr 5600 ft in sdtr hole. Humble O&R Co.'s Mrs. Eliza Welder 1, 5 mi fr Victoria line and near Heyser, lcn. Matagorda Oil Corp.'s Brundrett Est. 1, lot No. 294, Brundrett Estate 1, J. Power and J. W. Hewitson League 2, Matagorda Island, set 16 in csg 176 ft.

CAMERON COUNTY — J. F. Anderson's Turfitt 1, blk 397, San Benito sub, Espiritu Santos gr, 3 mi ne Rio Hondo, sd 4198 ft slm. W. T. Daniels & King-Woods Oil Co.'s Port Isabel Co. 1, center lot 17, shares 29, 30 and 31, Buena Vista gr, 6 mi n Bayview, sp and sd, wor.

DE WITT COUNTY—R. Bourke's Steinman 1, Uriah Blue sur, 6 mi s Yoakum, sd 4408 ft, show little gas.

DIMMITT COUNTY — Diamond Half Oil Co.'s A. Eardley Est. 1, R. G. Morgandale sur No. 6, ab 1322, 5½ mi nw Carrizo Springs 1, dr 3116 ft, shale, with sand streaks.

DUVAL COUNTY — The California Co.'s Gruy Est. 1, sec 157, in Kohler area, dr 2120 ft, top Cole 1809 ft. Continental Oil Co.'s Clara D. Sevier 6-A, sec 447, Driscoll field, td 3435 ft, sand 3406-23 ft, run csg to td, made small well thru perforations, trying to wo. J. H. Chandler's Rita De Pena 1, sh 4, Mesquite gr, elev 665 ft df, sd 3450 ft. Highland Oil Co.'s Wm. Hubbard 2, nw se sec 75, Loma Novia field, td 2580 ft, top sand 2572 ft, comp jetting 150 bpd. P. K. Kelly's Tinney Est. 1, sec 8, Piedras Pintas area, sand 800-04, 5-in csg 795 ft, td 804 ft, woc. Marshall-Denton-Aiken's Rogers Est. 1, 2310 ft nel, 1650 ft sel of sur No. 15, 9 mi nw of San Diego, mir (this well formerly carried as Howeth & Swiger, also A. E. Masterson). Magnolia Pet. Co.'s Emil Labbe 1, sec 2, Labbe district, sd 1300 ft, for water; Duval-Sentz 1, sec 165, 1½ mi nw Charamousca pool, coring 1561 ft. Rogers O&G Co.'s Smith-Corkill Est. 1, 330 ft swl and sel of n¼, sec 494, lcn. Santa Clara Oil Co.'s R. C. Corbett 1, sec 92, GH&H RR sur, ne portion county, dry and abd 4012 ft. Sun Oil Co.'s Wm. Hubbard 1, se¼, sec 84, Loma Novia area, dst 2816-30, 37 min ⅝ bottom and ¾ choke top, show dry gas, 425 lbs first 21 min, increased to 900 lbs. last 16 min. Stanolind O&G Co.'s Ira G. Yates 1, sec 416, Labbe area, sd 2948 ft. The Texas Co. & Ohio Fuel Oil Co.'s Duval County Ranch Co. 1, sec 96, Piedra Lumbre, set 10 in csg 101 ft, re-dr. Texla Oil Corp.'s Nueces Land & Live Stock Co. 1, sw ne sec 101, 5 mi nw Eagle Hill, dr 1050 ft. Trinity Drillers et al's Clara Driscoll Sevier, Sweden Farm Lands, Santa Rosalia gr, nw Driscoll field, lcn. Westheimer & Daube's L. Campos 1, 330 ft sl and wl of sec 224, east outpost well of Seven Sister field, dk.

EDWARD COUNTY — Paul Teas' B. J. Stewart 1, se¼, sec 2, GC&SF sur, lcn for 6000 ft test.

FRIO COUNTY—W. D. Bacon et al's J. E. Burns 1, T. H. Clifto sur, sw Bigfoot, sd 1980 ft, for fuel. Midland Oil Co.'s Halff & Oppenheimer 1, se¼, sec 11, John Gibson sur. nw Pearsall, coring 3825 ft.

GOLIAD COUNTY — Brown & Wheeler's Kauffman 1-C, blk 14, G. Southerland sur, Hords Creek, sand 4530-46 ft, shale 4546-58 ft, oil sand 4558-66 ft, completing, flowing through ⅛ in choke, tp 500 lbs. cp 1300 lbs. Dirks Bros.' G. A. Ray 1, B&B sur, ab 421, 4 mi ne of Pettus, sw sand 3217-27 ft, abnd 4227 ft. Keystone Royalties Co.'s C. B. Wood 2, John Shearn sur, 3 mi e Berclair, sand 5976-85 ft, set csg, wocs. Sun Oil Co.'s J. R. Kauffman 1, T. T. Trevino sur, 1 mi ne Hords Creek field, lcn.

GONZALES COUNTY—Forrester Oil Co.'s H. B. Steen 1, N. M. Bane sur, s part of county, sd 150 ft. Inter-Allied Pet. Corp.'s C. M. Wells 1, tr 3, sub 1, Jose de la Baume sur, sd 3548 feet, hard Taylor. Resource Oil Co.'s Otto Lanbeck 1, J. M. Salinas sur, 3 mi w Gonzales, sp and sd.

GUADALUPE COUNTY—J. E. Clark's J. F. Larison 1, G. Dewitt sur, ab 16, 330 ft sw Clark's Lay 1, coring 2585 ft, last report. F. N. Gallagher's W. B. Lay 1, J. K. Davis sur, lcn. Jim Harper et al's J. Z. Fulshear 3, Robt. Smith sur, 2 mi nw Prairie Lea, dr 1925 ft. Henadena Oil Co.'s (Sterling & Wilson) R. P. Lowman 2, G. Allen sur, Staples, mim. Kniffin & Gallagher's Stagal-Lay 1, Davis & DeWitt sur, set csg 2360 ft, top Austin chalk 2357 ft. Hopkins Bros. et al's F. C. Gabriel 2, 65-ac tr, Geo. Allen sur, Staples, lcn. R. C. Robbins' Mrs. J. W. Manford 1, James Hodges sur No.

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374, 1250 ft e Manford pool, sp. Suttle et al's Baenzinger 1, A. O. Manchola sur, sd 2155 ft, may abnd.

HIDALGO COUNTY—D. M. C. Oil Co.'s Daskam 1, blk 34, por 45, 4½ mi ne Samfordyce field, sd 4114 ft. Gulf States Oil Co.'s Delta Orchards 1, lot 2, blk 73, Las Mestinas gt, 1 mi s Mestinas field discovery well, lcn; Gulf States Oil Co.'s J. C. Engelman 2, 400 ft sl and el lot 3, blk 70, Las Mestinas gr, 500 ft e Mestinas field discovery well, dk. Lensgraf-Walden-Carmen's Brock & Showers 1, lot 4, blk 12, por 80, Juris of Reynosa, 12 mi nw Mission, dr 1130 ft. Maxwell-Mundy's Southland Dev. Co. 1, lot 11, blk 20, Alamo Land & Sugar Co. Subd, Alamo tr, 4 mi s Alamo, mim, 4000 ft test. S. J. Sloan et al's Brock & Showers 1, lot 9, blk 16, por 80, Juris of Reynosa, w of Mission, td 6003 ft, ran electric formation test, set csg at 4715 ft, gas sand 4655-71 ft, oil sand 4671-94 ft, will perforate csg, dr plugs. Stevens & Mundy's F. B. Guerra 1, tr 12, por 41, 2000 ft n Samfordyce field, elev 188 ft, df, td 3030 ft, set csg 2990 ft, washing with oil. Union Sulphur Co.'s ARGL&I Co. 5, lot 2082, N. Capisallo district, Llano Grande gr, td 7529 ft, set csg on bottom, perf between 7479-88 ft, flowing about 3 bph, 2/3 sw, tp 500 lbs; ARGL &I 6, tr 2358, blk 49, N. Capisallo district, 4500 ft ne of Mercedes field, dr 5725 ft.

JACKSON COUNTY — Shell Pet. Corp.'s Mauritz Bros. 1-A, tr 19, A. Kountze sur, ab 237, nw of Mauritz field, dr 3300 ft. Smith & McDonald's Mauritz Bros. 1, 466 ft sl, 394 ft sl 80-ac lease, Cummings sur No. 17 (Pure Oil Co. lease) Mauritz district, coring 5405 ft. T. P. Coal & Oil Co. and Venza Oil Co.'s J. M. Roseborough 1, 466 nl and wl of lease, Morris & Cummings sur No. 33, ½ mi s Mauritz field disc well, dr below sur csg.

JIM HOGG COUNTY — S. L. Miller Oil Co.'s Yeager 1, 150 ft el, 475 ft sl blk 6, sur 20, dr 1165 ft.

JIM WELLS COUNTY—J. E. Walsh's W. D. Wade 1, lot 3, W. H. Bode sub, Sandia district, mir.

KARNES COUNTY — Mart Pet. Corp.'s Cochran 1, McConnell League, sp and sd. Dirks Bros., Belknap 1, Chas. Haynes sur, 4 mi n of North Pettus field, dry and abnd 4005 ft, sw in Pettus sand 3492-3505 ft.

KENDALL COUNTY—J. E. Freeman's Gerfer's 1, Mark Hodgson sur No. 786, sd 102 ft. Southwestern Dev. Synd., Ltd.'s Willie Werner 1, Torrey sur No. 781, Sisterdale area, ur 910 ft.

KERR COUNTY—Auld & Evans' Heffner 1, sec 13, BS&F sur, ru and sd. Jeff Love & Eastland Oil Co.'s Jeff Love 5-E, Martinez sur, sec 1594, ¼ mi se original Love Ranch test, sd 5625 ft.

KIMBLE COUNTY — Forest Dev. Co.'s Stapp 1, sec 682, setting 190 ft csg to shut off water. Wilcox O&G Co.'s Patterson 1, sec 1, D&P Ry. sur, ab 915, dr 4450 ft.

KLEBERG COUNTY—John Bartlett's Anton Dietz 1, 330 ft sl and el of blk 16, sec 48, KT&I sur, 2 mi sw of Kingsville field, sp and sd. Harry Clark's W. S. Rogers 1, lot 1, blk 36, Kleberg sub, sd 750 ft. Fidelity Explor. Synd.'s R. G. Flato, Trustee 1, blk 14, sec 40, KT&I sur, Kingsville area, lcn; Sam Michalk et al 1, lot 5, blk 37, KT&I sur, coring 2250 ft. (This well taken over from Parr & Ponder).

LA SALLE COUNTY—O. N. Beer & C. L. Witherspoon's La Salle Co. 1, sec 19, near Fowlerton, wor.

LEE COUNTY—Douglas Spivey et al's First Nat'l Bank (T. S. Henderson) 1, Wm. L. Mock sur, lcn.

LIVE OAK COUNTY—C. A. Beaucamp's S. A. Joint Stock & Land Bank 1, lot 10, J. Turner sur, lcn. Benito Oil Co.'s Eliz Mahoney 1, Mark Killely sur, 3 mi w Three Rivers, sd 78 ft. Earl Callaway et al's W. R. Lyne 1, sec 74, M. M. Lyne sur, ab 763, coring 2756 ft, top Jackson 2477 ft, top Cole 2558 ft; Moozegemba 1, lot 122, Geo. Est sub, blk A, ab 113, S. L. Williams sur, lcn. Conway & Beuscher's Sanger 1, GC&SF sur No. 383, ab 636, 15 mi sw George West, dr 2260 ft, top Jackson 1840 ft. Lion Oil & Refining Co.'s Dick Dobie 1, GH&H sur No. 23, s edge of McNeill field, sd 5708 ft for repairs. Luray Oil Co.'s Little 1, M. M. Shipp sur, ne offset discovery well in McNeill (north) field, dr 510 ft. Slick-Urschel Corp.'s Watson & Shipp 1, P. Salinas sur, Fort Merrill area, lcn. Smith & Story's Dinero Townsite 2-A, Jane Curry sur, North Lucas area, sp. Trinity Dr. et al's P. E. McNeill Est. 1, 330 ft nel and sel of blk 10, Jane Curry sur, sw outpost well McNeill field, mim. J. O. Whittington's Little 3, M. M. Shipp sur, 660 ft sw discovery well, McNeill (north) area, dry and abnd 5286 ft.

MAVERICK COUNTY—Thompson & Streeter's Joseph Wipff 1, sec 18, 7 mi w Chittim field, 10 mi n Eagle Pass, sd 220 ft.

McMULLEN COUNTY—Aransas Oil Co.'s M. H. Reed 1, J. A. Spicer sur No. 70, 12 mi sw Tilden, sd 1681 ft. Darby Pet. Corp.'s E. R. Hagist 1-B, 6 mi w Loma Alta field, cored Mirando sand 1940-60 ft, show sw. L. O. Gleason's Fitzpatrick 1, J. A. Loving sur No. 52, dr 1810 ft. Marzo Oil Co.'s E. R. Hagist 1-B, sec 6, southern part of county, dr 530 ft. L. D. Ormsby's Jacob 3, Sparks Sur No. 18, mir. Stephenson & Wuest's Fisher 1, R. O. O'Boyle sur, sw of Calliham, set csg 502 ft, dr plugs. Texas Inland Oil Co.'s H. L. Lark 2-A, M. O'Boyle sur, south of Jacobs field, sp. Wilkerson & Lightfoot's H. L. Lark 6, blk 113, Lark subd, Scrugham sur, nw Calliham field, td 1050 ft, went to sw, reworking.

MEDINA COUNTY—Frank A. Brown's A. E. Brueks 1, John Ward sur, dr 450 ft. Caroco Oil Co.'s (Callahan & Roberts) H. Taylor 2, A. Brushet sur No. 135, 5 mi sw Hondo, sd 380 ft. E. J. Deupree's L. J. Bruecks 1, Henry Castro sur No. 248, sd 680 ft. Ed Falvey et al's McMenemy 1, sur No. 33½ G. Petty sur, 4 mi se Devine, sp. Gates & Hill's Odom 3, H. Castro sur, No. 174, 5 mi sw Hondo, dr 237 ft. Letro Oil Corp.'s F. B. Forest 1, sec 69, 1½ mi ne Ina field, 1½ mi Adams field, ur 470 ft. Scoggins and Sander's L. W. Burell 1, M. E. Gage sur, elev 867 ft, dr 2110 ft.

MILAM COUNTY — Mincryst Mfg. Co.'s Bartek 2, J. A. DePena sur, 3 mi ne Buckholts, sd 950 ft.

NUECES COUNTY — Bluff Pet. Corp.'s Bluntzer 1, sh 6, Bluntz Lands, Casa Blanco, 10 mi n Banquette, dr 1450 ft. J. K. Culton's H. B. Baldwin et al 1, blk 20, Russell Farm Blocks, 1½ mi w Corpus Christi, dr 3600 ft. Gilcrease Oil Co.'s W. W. Sanders 1, BS&F sur No. 165, ab 55, sand 4046-51 ft, csg 4040 ft, swabbed considerable oil and mud, flow stopped when cement gave away and mud broke into hole. La Jita Corp.'s Richard King Est. 1, se¼ sec 22, Richard Ranch sub, ne discovery well, King field, td 6008 ft, set 7 in csg 5220 ft, perf csg 5140-55 ft, swabbing little oil. Magnolia Pet. Co.'s Bobby Baldwin 2, BS&F sur, No. 165, 3000 ft sw discovery, dry and abnd 6610 ft. H. A. Meyers' J. Harney 1, 225 ft sl, 850 ft wl of 80-ac tr, Gregorio Farias League, 1400 ft s of Nueces river, 1 mi e Callahan, mim. Sherman Nelson et al's Bertha Buckholt 1, 990 ft el, 150 ft sl of s 114.89-ac of 258.9-ac tr in blk 4, sec 316, Buckholt Partition, 2 mi e Baldwin field, ru. Richardson & Thomas' Page Bros. 1, Geo. Franks subd, w Saxet field, dry and abnd 5856 ft. Santa Clara Oil Co.'s Clara Driscoll Sevier 1, Wm. Gamble sur, ab 6, 13¼ mi ne Driscoll, sp. Shell Pet. Corp.'s Ed F. Flato 1, Trs. 9 and 10, H. H. Sheppard Farm lots, td 7006 ft, pb 4750 ft, set csg, will perf 4536-43 ft.

REAL COUNTY—H. J. Heartwell et al's L. J. Haby 2, AB&M sur No. 175, sd 3225 ft.

SAN PATRICIO COUNTY—Argo Royalty Co. & Willie Storm's Nancy Hobbs 1, Delgado gr, 1 mi s Mathis, sd 3520 ft. Benedum & Trees' E. H. Welder 1, sec 34, Welder sub, 2½ mi w of Plymouth field, dr 2740 ft. Conroe Dr. Co.'s E. H. Welder 1-G, sec 47, s end of Plymouth field, td 5613 ft, set csg, woc. Magnolia Pet. Co.'s Corpus Christi Bank & Trust Co. 3, H. H. Hunter sur, s of Plymouth field, dr 2800 ft. Plymouth Oil Co.'s E. H. Welder 17-C, on n line sec 49, Welder sub, north outpost well Plymouth field, deepened to 5653 ft, Welder sub, dst show 600 ft oil, 35 lbs. pressure, 12 min, set 5¾ in csg, woc. Sun Oil Co.'s J. M. Hung 1 (blks 5 and 6) sec 34, Taft Farm Tracts subd, se Plymouth field, sand 5600-10 ft, shale 5610-11 ft, set csg 5600 ft, wocs.

STARR COUNTY— Ash & Tackett's Margo 1, blk 4, sh 3-B, por 70, sd 200 ft. Barnsdall Oil Co. & Phillips Pet. Corp.'s Yturri Land & Cattle Co. 2, por 100, 660 ft nw of Samfordyce, production, sand 2813-21 ft, set csg to td, will perf. John H. Clopton's Roos & Bennett et al's 2, por 92, dry and abnd 3000 ft; Kelsey-Bass 2, por 87, 3½ mi n of State Highway 4, sec 10, sp. Cook-Maris-Arnold's Starr County Cattle Co. 1, 220 ft nl, 25 ft el of lot 24, por 84, 2000 ft n of State Highway No. 4, dk. Frank Doyno's Seabury et al 1, 1000 ft sl, 850 ft el of tr 5, por 75, ½ mi w of Los Olmos field, sand 372-76 ft, set 5 3/16 in. csg 372 ft, dr plugs. Evans & James' Ferry 1, por 77, 2 mi w Rio Grande City, dr 1325 ft. McCurry & Yates' Starr County Cattle Co. 1, blk 58, J&L sub, por 89, Barbacoas area, lcn. A. Nix et al's Starr County Cattle Co. 1, blk 58, J. L. sub, por 89, Barbacoas area, td 2817 ft, ran electric formation tester, pb and sdtr 1853 ft, dr to 2325 ft, set csg 2325 ft, test sw thru perf 2313-17 ft, now coring 2440 ft. Pedernal Oil Co.'s Sarah Welch 2, lot 3, Welch sub, El Pedernal gr, ru. H. J. Porter et al's Garcia Land & Cattle Co. 1-B, blk 2, por 100, nw of Samfordyce field, td 2817 ft, sand 2785-93 ft, test sw thru perf 2786-90 ft, recement.

TRAVIS COUNTY—G. A. Arts' Rolff 1, Thos. Hancock sur No. 20, ½ mi n Sweden, sd 905 ft. W. O. Daffey's C. C. Nells 1, G. Gates sur, dr 335 ft. C. B. Collard's J. Blomberg 1, Windburn sur, sd dry and abnd 885 ft. J. E. Smith 2, L. Kimbro sur, dr 680 ft.

VICTORIA COUNTY—Barnsdall Oil Company & Felmont Oil Corp.'s W. R. Smith 1,

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A. Murray sur, s of Placedo field, sand 4773-78 ft, testing. Heep Oil Corp.'s J. J. Welder 1, Phillip Graves sur, near Nursery, dk. J. McDowell's Krissek 1, center blk 45, Placedo townsite, dr 3500 ft. E. L. Smith Oil Co. & Gulf Prod. Co.'s Boehm 1, Placedo townsite, dr 4000 ft. Sun Oil Co.'s J. J. Marek 2 SA&MG Ry. sur No. 9, Placedo area, sand 4766-73 ft, set csg, woc. Welder O&G Co.'s Welder 1, in 2230.9-ac tr in Felipe Dimmit Two League gr, 4 mi s Victoria, lcn, contract let. Westgage Oil Co.'s Henderson & Pickering 1, Placedo area, dr below sur csg.

WEBB COUNTY—D. E. C. Oil Co.'s Slator Ranch 1, blk 29, Mission Oil Company sub, Slator Ranch, J. S. Borrego gr, sd 1608 ft. French Oil Corp.'s Juan Guerra 1, blk 14, se sec 334, 3 mi ne Oilton, dr 1750 ft. O. W. Killam's Ortiz Ranch 1, por 17, 6 mi nw Laredo, sd 65 ft. C. H. Lewis et al's Lopez 1, sur 110, 2 mi s of Lopez field, cored sand 2251-60 ft, dst 2250-60 ft, 7 in csg 2246 ft, swabbing 15 bph. Magnolia Pet. Co.'s Volpe Bros. 1, sec 485, n of Carolina-Texas field, dr 2940 ft; Garcia-Arriba 1, blk 8, Henry James sub, Albercas de Arriba sur, 5½ mi e of Aviator field, dk. R. E. Misner's Garcia 1, se¼ sec 457, testing 2190 ft. Rhea Nixon & R. W. Talbot's A. S. Billings 1, nw, se se sec 113, 1 mi sw Lopez field, mim. S. S. & B. Oil Co.'s Lone Star Construction Co. 9, por 12, 12 mi nw of Laredo, sd 150 ft. South Texas Oil Co.'s Laurel 2, blk 1, sur No. 269, Laurel area, dr 1050 ft. W. H. Vernor, Tr.'s Jefferies Ranch 1, blk 13, sec 1453, 30 mi nw Laredo, sd 40 ft. A. H. Wray's Geo. Steumpke 1, sh 1, Brewster Pasture, Joaquin Galan gr, sd 1454 ft.

WILLACY COUNTY — King-Woods Oil Co.'s Stillman Ranch 1, lot 16, blk 30, sh 44, Stillman Ranch sur, San Juan Carricitos gr, sd 6516 ft. L. & S. Drlg. Co. & South Texas Dev. Co.'s F. Armendiez 1-A, Little Share 4, sd 5300 ft.

WILLIAMSON COUNTY—Brown et al's Mays 1, 2700 ft nwl, 900 ft nel of lease, T. A. Moore sur, dr 600 ft. Fuchs et al's O. R. Spreckles 1, 750 ft nwl, 3950 ft swl of J. Sapington sur, dry and abnd 995 ft, top serpentine 978 ft. Glass Bros.' A. Albert 1, P. Coursey sur, sd 785 ft. Hays Gee's Coupland State Bank 1, Lancey sur, w of Coupland, dr 695 ft. Rule et al's Bochmeyer (Rummell) R. Cartwright's sur, sd 800 ft. G. A. Ripley's A. Muery 1, J. P. Wyeke sur, Coupland, lcn. Taylor Refining Co.'s Carolson 1, 450 ft nl, 150 ft el of 60-ac tr, R. Dunman sur, top Austin chalk 1580 ft, now dr 1608 ft.

ZAPATA COUNTY—H. F. Crow's B. Uribe 1, blk 35, sub of sh 11, por 4 and 5, San Ignacio sub, J. V. Borrego gr, dk;Yzaguirre 1, sh 17, por 15, Lopena area, test sw 415 ft, abnd. J. J. O'Hern et al's S. Vela 1, blk 3, por 27, 7 mi ne of Charco Redondo field, dr 1180 ft. Joe Palmer's Emma Markrud 1, blk 22, sec 616, sd 1270 ft. SR&C Oil Corp.'s Trevino 15-A, blk 8, sec 66, Escobas field, td 2580 ft, pb 1285 ft, comp 50 bpd.

TEXAS GULF COAST

ANGELINA COUNTY—P. W. Henderson's Weeks 1, 12 mi se of Lufkin, H. Hayman sur, abd 2492 ft.

BRAZORIA COUNTY — Gulf's Wilkes & Smith 1, Lockridge prospect, J. W. Hall sur, ru. R. R. Osburn's J. L. Jones 1, 4 mi w of West Columbia, J. Thompson sur, sd 20 ft.

BURLESON — Carl Dyer et al's C. W. Young 1, s of Caldwell, J. Bird sur, dr shale 285 ft.

CHAMBERS COUNTY—Anderson & Johnson's White 1, 2 mi n of Anahuac field, MaCahey sur, dr shale 830 ft. Salt Dome Oil Co. & Gem Oil Co.'s Lawrence 1, Cotton Lake prospect, J. Grant sur, dr shale 5410 ft.

FT. BEND COUNTY — Bunte Oil & Gas Co.'s A. P. George 1, Smithers Lake prospect, J. Jones sur, sd 650 ft. Texas Gulf Producing Co.'s K. B. Winston 1, North Richmond prospect, S. Isaacs sur dr shale 4250 ft.

GALVESTON COUNTY — Sun's J. E. Hughes 1, Green Lake prospect, W. C. M. Baker sur, ru.

HARRIS COUNTY—Cockburn Oil Corp.'s Houston Ship Channel 1, Battle Ground prospect, A. McCormick sur, coring 3695 ft. H. C. Hill's Swilley 1, Sheldon prospect, Victor Blanco sur, building road. E. E. Young's Griffith 1, w of Humble, A. R. Bedeman sur, sd 4275 ft.

JEFFERSON COUNTY—Jack Frazier's Oswald 1, Cheek prospect, M. Peveto sur, dr shale 6885 ft. Humble Oil & Refining Co.'s Miller 1, Amelia prospect, A. Savery sur, dk, same operator's White 1, Jefferson Island prospect, T. & N. O. sur, section 370, dr shale 3785 ft. Sun's Broussard 1, Labelle prospect, B. Blackmon sur, flowing salt water 8285 ft. Tatum & Pendigras' Owens 1, n of Port Arthur, Port Arthur Land Subdivision, dr shale 410 ft.

MATAGORDA COUNTY—Hamman Explo. Co.'s Cleveland 1, se of Bay City, E. Hall sur, dr shale 1400 ft. Helmerick & Payne's Hawkins 1, Sheppard Mott, D. McCarthy sur, dr shale 5994 ft. H. M. Smith's Wadsworth Estate 1, S. R. Fisher sur, reaming 8853 ft.

MONTGOMERY COUNTY—Wm. Thompson et al's Scott 1, Ducas prospect, F. Wheeler sur, sd 3664 ft.

ORANGE COUNTY—Blue Line Oil Co.'s Peet 1, 8 mi n of Orange, R. Ballew sur, dr shale 1843 ft. Coker Oil Co.'s Mansfield 1, s of Vidor, J. W. Hall sur, dr shale 1200 ft.

SAN JACINTO COUNTY — Darby-Jones-McBee Drilling Co.'s J. R. Bennett 1-A, D. Beer sur, coring 2600 ft.

WHARTON COUNTY—Pure's Paige 1, Blue Basin prospect, J. Pirie sur, salt water sand 5851 ft. Sterling Oil & Refining Co.'s Janek 1, East Bernard prospect, J. Scott sur, swabbed salt water 7840 ft. Texas Co.'s Pierce C-1, Five Corners prospect, J. Caldwell sur, dr shale 5672 ft.

WYOMING

ALBANY COUNTY—Ohio Oil Co., W. B. Emery 1, cse ne 30-15n-75w, dr red beds at 1962 ft. Sundance topped at 1279 ft, was barren.

BIG HORN COUNTY—J. H. Shafer 1, sw sw sw 8-49n-91w, dr 1273 ft.

CARBON COUNTY — General Petroleum Corporation of California Whitford 1, sw se ne 24-20n-34w, dr 5500 ft with next objective the Dakota formation expected at 6100 ft.

NIOBRARA COUNTY — Riggs Oil Co., Spaugh 2, sw sw 32-34n-65w, lcn. Shogren and Hultgren Olinger 1-A, cne ne se 13-6n-63w, dr 1661 ft.

PARK COUNTY—Geo. T. Beck's 1, nw se nw 27-53n-101w, dr 1444 ft.

SHERIDAN COUNTY—Sheridan Syndicate Allison 1-A, sw sw se 15-55n-85w, dr 2800 ft.

WESTON COUNTY—Conway Oil Corporation 1, se se nw 7-41n-60w, dr 2210 ft.

Catalogs . . . Bulletins

Compressors

Pennsylvania Pump & Compressor Company, Easton, Pennsylvania, announces availability of a new booklet on Class 3-AT and 4-AT air cushion valve compressors of the single-stage, horizontal, roller bearing type. The booklet, containing 15 pages and cover, is profusely illustrated.

Stop Nuts

Elastic Stop Nut Corporation, Elizabeth, New Jersey, has issued Catalog No. A-43, describing the elastic stop nuts it manufactures. The catalog will be mailed upon request.

Arc Welders

An attractive, new 24-page bulletin just published by Harnischfeger Corporation of Milwaukee, covers the complete line of P&H-Hansen Arc Welders from 50 to 800-ampere units as well as welding fixtures and accessories. Copies will be sent upon request to the home office or to any of its branches or agents. Ask for Bulletin HW-4, "Weld It Well."

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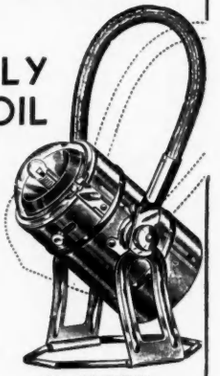

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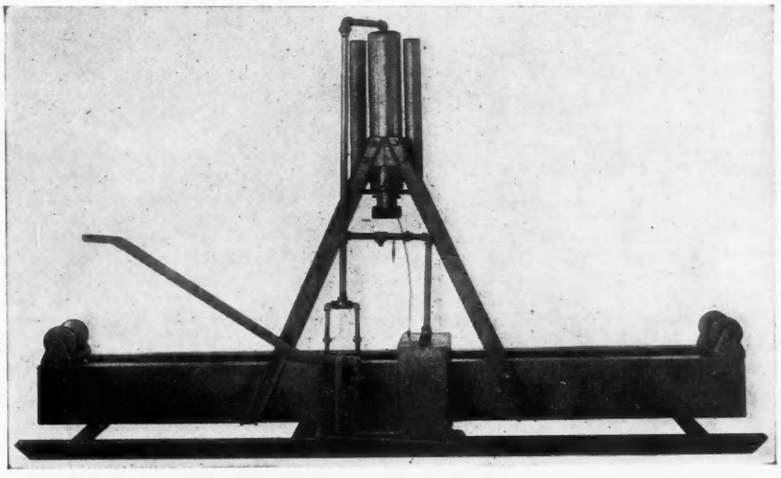
NEW PRODUCTS FOR THE FIELD
Machinery • Tools • Catalogs • Books

HYDRAULIC STRAIGHTENER
New Deal Specialty Company

New Deal Specialty Company, Okmulgee, Oklahoma, has perfected and placed into production, its new Duo-Hydraulic Pipe Straightener, in the Model A, hand operated unit. The company will also have three other models of power-driven straighteners using Triplex pumps of their own manufacture, giving the power units greater speed and more power than the hand operated model.



New Deal Hydraulic Pipe Straightener

The Model A is mounted on a steel sled for convenient moving and the base is heavy 12-inch channel, spaced so the steel slides on the carrying wheels can be easily moved to any position. The carrying wheels are specially designed to fit the pipe and steel shoes (three) fit the different sizes of pipe to prevent kinking of pipe.

The 18-inch ram stroke enables the machine to take extreme bends, and the entire machine is designed for strength and durability. Special care has been taken in the machine work and assembly. Steel castings insure extra strength and weight seamless tube, bored and ground to the smoothest possible finish, the manufacturer claims. Oil storage is ample for all requirements and all parts are accessible and quick and easy adjustment or replacement.

The overall dimensions are: length, 12 feet; height, 7½ feet; and width, three feet.

BELT
United States Rubber Products

United States Rubber Products, Inc., New York City, has announced the Royal Cord Belt, a new cord transmission belt. It is the outcome of improvements and refinements of the present U. S. Cord Belt with its encasing duck envelope and presents one which will meet the whole range of transmission problems, it is claimed.

The most striking characteristic of this new addition is the square cut edge. Due to the cords being embedded in rubber, the cut edge in this belt has proven its quality when run against shifters and particularly over cord belts with the duck envelope folded over the edges.

The laminated and cut edge construction permits the use of a single ply of duck on each side instead of the several plies in the envelope type. Since the efficiency of a ply of cord fabric in the carcass is much greater than that of a duck ply in the cover, it will be realized what an advantage in strength is gained when such substitutions are available in the same number of plies.

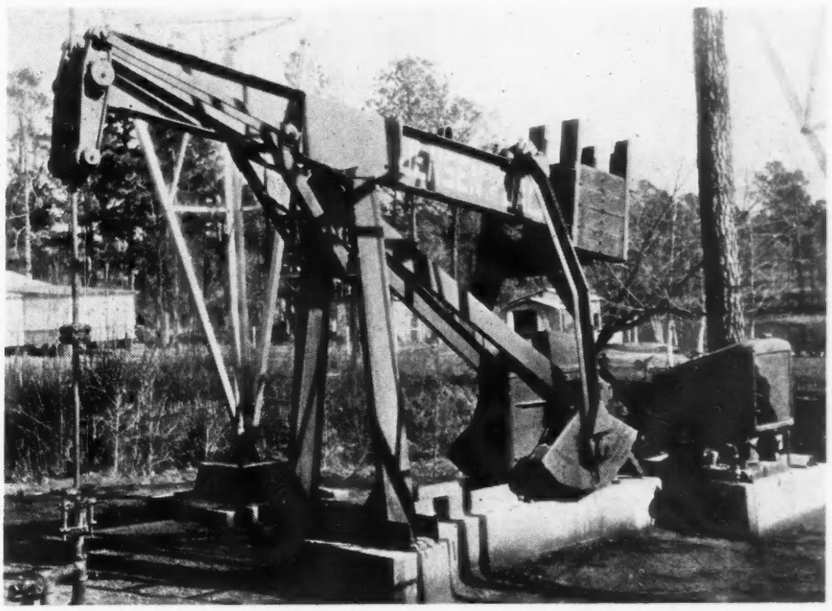
PUMPING UNIT
Jensen Brothers Manufacturing Co.

Jensen Brothers Manufacturing Company, Coffeyville, Kansas, has announced a straight lift pumping unit of all arc welded construction which can be used for pumping oil wells up to 3500 feet deep. The pump, shown in the accompanying illustration, is entirely fabricated by arc welding. The various parts are welded into one integral piece of steel by the electric arc. The main beam of the pump is 15 inches. The fixed legs are sections of channels welded to angles at the bottom and supporting the main beam. Other parts of the pump are standard sizes of plate, bar stock, angles and tubing, all fused together. The pump was built with shielded arc welding equipment supplied by The Lincoln Electric Company, Cleveland, Ohio.

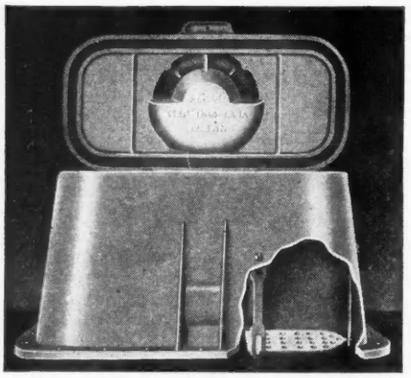
VALVE AND THIEF HATCH
Enardo Manufacturing Company

Enardo Manufacturing Company, Tulsa, Oklahoma, has announced a valve and thief hatch which needs no iron collar, avoids waste of oil and drippings on the roof, and eliminates fire hazards from sparks. It was designed for water-seal wood tanks. It is an all-aluminum vacuum-pressure type made in both round and long models. A tall 10-inch base was developed in order that it not be necessary to build an iron base. The double width opening on the long type permits a rest for the thief inside the opening, avoiding waste of oil and drippings on the roof.

The vacuum and pressure are controlled by weight of the metal. The valve



Jensen Electric Welded Jack



Enardo Thief Hatch

has no springs, is non-magnetic, will not produce a spark when struck by metal, and is rust resistant. The valve is equipped with a felt backed, gasoline and oil proof cork fibre gasket. The gasket is in the lid and so arranged that ice and dirt will not gather on the fibre, thus holding the valve open or freezing it shut.

The thief-hatch opening on the round model is eight inches in diameter and the long model is 7¾ by 17½ inches. The vacuum valve inside the lid is 5½ inches in diameter and is sufficiently large to take care of normal breathing on tanks for which it was designed. Valves are furnished for a one-half ounce vacuum and a pressure of two ounces or any other specifications needed.

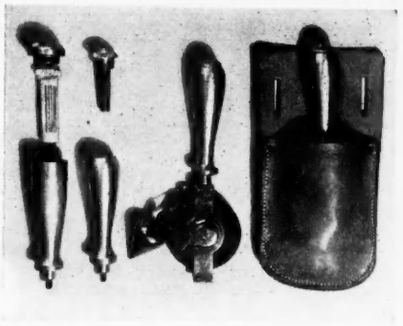
THREADING FIXTURE

The Landis Machine Company

The Landis Machine Company, Waynesboro, Pa., has developed an interesting and novel fixture for application to its "Landmaco" threading machines, for threading parts which have a thread on each end and requiring alignment and concentricity of both threads. In addition to providing for alignment the fixture also indexes automatically so that both ends can be threaded with one gripping. The fixture provides for maintaining concentricity of the pitch diameters of both threads and with the center line of the work within 0.005 inch.

The forgings are centered and the surfaces to be threaded turned and ground previous to the threading operation. A ground "Vee" block at the front of the work holding fixture serves to properly locate and center the front end of the forging. Alignment of the rear end is obtained by means of a manually operated dead center, which is under spring pressure and which moves out of the way when the forging is clamped in position.

With the work resting on a ground "Vee" block at the front end and the rear end aligned with a center, the operator drops a self-compensating clamp on the work to hold it in position. A compensating wedge on the base of the fixture, actuated by the clamping device, moves over under the pad forged integral with the bar, seating the bar firmly and thus maintaining the alignment established by the center.



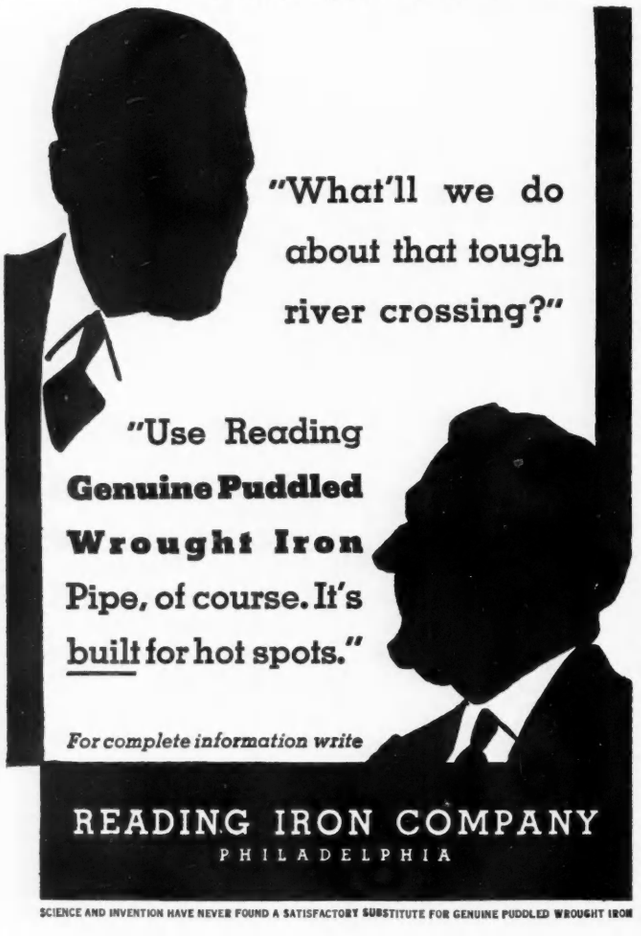
Metal Products Gauge Accessories

GAUGE LINE ACCESSORIES

Metal Products Company

Metal Products Company, 1308 Evergreen Street, Houston, has announced a line of handles and all-leather holsters for gauge lines. The hollowed-out chamber of the "Atco" aluminum handles provides gaugers with a needed storage space for a tube of water-finding paste or prepared gauging chalk. A threaded and knurled aluminum cap securely seals the chamber against the elements and keeps the handle in good condition. A threaded steel insert serves to secure handles to frames of the Lufkin line of products, the manufacturer states.

The all-leather holsters assure longer life for costly gauge tapes, not to mention the convenience to the gauger. They are furnished with or without belts.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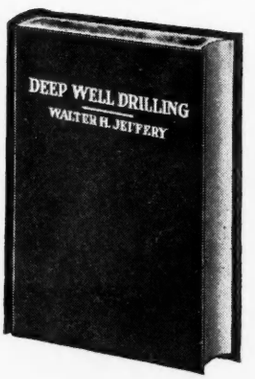

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This Week with the Industry's EQUIPMENT SUPPLIERS

New Babcock & Wilcox Sales Office

Babcock & Wilcox Company has opened a sales office at 1809 Railway Exchange Building, St. Louis, Mo.

F. C. Brandt, formerly of the Chicago office of this company, is in charge of the new office, which will serve the eastern half of Missouri and the southern section of Illinois.

Worthington Enlarges Its Buffalo Works

The Board of Directors of Worthington Pump and Machinery Corporation has authorized the construction of an additional machine shop building at its Buffalo, New York, works, this extension to cover a floor area of 75,000 square feet. The new building will supplement the present capacity of the Buffalo works and will add materially to the plant facilities for the manufacture, assembly and testing of its products.

The local management is now proceeding with the work and it is expected that the building will be ready for occupancy about the first of the coming year.

Brown-Hovis, Inc., Is New Supply Concern

C. C. Brown of Brown Oil Tools, Inc., Houston, and W. S. "Bill" Hovis, formerly with Halliburton Oil Well Cementing Company in the Gulf Coast, have organized Brown-Hovis, Inc., a supply sales and service organization, with headquarters at 2214 Campbell Street, Houston. Brown, president of the new sales organization, will continue his manufacturing company as he has in the past. Hovis, vice president and sales manager of the sales company, recently resigned his Halliburton Oil Well Cementing Company connection to become associated with Brown in the new company.

"Bob" Horton Joins Link-Belt Company

Robert "Bob" Horton has joined the sales force of Link-Belt Company to assist in the sale of the company's mud vibrating screens in the Gulf Coast and Mid-Continent. Horton, who has been manager of the Houston store of Bridgeport Machine Company, will continue to make Houston his headquarters.

George R. Woods Is Visiting European Fields

George R. Woods, New York manager of Regan Forge & Engineering Company, sailed October 18 on the S. S. Statendam for the United Kingdom and Continental Europe, where he will call upon important oil companies. Recently, Woods visited all important California fields, studying the latest production methods.

While holding their convention in Houston, October 10-12, the members of the A.I.M.E., Petroleum Division, Mid-Continent Section, took time off on October 11 to visit the new home of Mission Manufacturing Company where they were entertained by the officers of the company and taken for a tour of the plant. In the picture above are the engineers who made the inspection of the plant. W. B. Sharp, president and W. T. Campbell, secretary of the Mission Manufacturing Company (shown from left to right standing in the doorway) represented the company. Paul Weaver was chairman of the A.I.M.E. plant visiting committee and took charge of the trip through the above and other plants in Houston manufacturing oil field tools and equipment.

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Squeaks from the Bull Wheel

A Personal Matter

One day there came to a hospital clinic a negro woman with a fractured jaw. The surgeon, intent on discovering the exact nature and extent of the injury, asked numerous questions, to all of which the patient returned evasive answers. Finally she admitted she had been "hit with an object."

"Was it a large object?" asked the physician.

"Tol'able large."

"Was it moving rapidly or slowly?"

"Tol'able fast."

Then, her patience exhausted, she blurted out: "To tell de troof, doctah, Ah wuz jes' nachelly kick' in de face by a genl'man friend."

The Doctor Knows

A retired colonel had been advised by his doctor that if he did not give up whisky it would shorten his life.

"Think so?" asked the colonel.

"I am sure of it, Colonel. If you will stop drinking I am sure it will prolong your days.

"Come to think of it, I believe you are right about that, doctor," said the colonel. "I went 24 hours without a drink six months ago, and I never put in such a long day in my life."

Ask Dad—He Knows

The teacher was explaining the word "recuperate." "Now, Tommy," she said to a small boy, "when your father has worked hard all day, he is tired and worn out, isn't he?"

"Yes, ma'am."

"Then, when night comes, and his work is over for the day, what does he do?"

"That's what mother wants to know," Tommy explained.

Disgusted

One evening in October
When I was far from sober
And dragging home a load with manly pride,
My feet began to stutter,
So I laid down in the gutter
And a pig came up and parked right by my side.
Then I warbled: "It's fair weather
When good fellows get together"
Till a lady passing by was heard to say:
"You can tell a man who boozes
By the playmates that he choose."
Then the pig got up and slowly walked away.

—*Pure Oil News.*

Retailer

"When I was a boy," said a gray-haired physician, who was in a reminiscent mood, "I wanted to be a soldier, but my parents persuaded me to study medicine."

"Oh, well," consoled his sympathetic neighbor, "such is life. Many a man with wholesale ambitions has to content himself with a retail business."

Yea Harvard!

Introduction to a speech, as reported by the Harvard Lampoon:

"Gentlemen——" (Laughter and applause). As I stand before you I am reminded of the Harvard man and the Yale man who were walking down the street one day, when suddenly a pretty girl stepped off the curb, right in the path of a Mack truck. The Yale man darted out, tackled the girl, and knocked her to safety.

"Well, the Harvard man and the Yale man walked on a little farther, and suddenly another girl stepped out, right in the path of another Mack truck. And what did the Harvard man do? Did he tackle the girl? No siree. He tackled the truck."

Behind Before, Besides

What makes this train so late, porter?

Well, yo' see, boss, dey's a train in front da's behind an' we was behind befo' besides."

Put Him in High

A new York business man, who owns an estate in eastern North Carolina, where game is plentiful, always goes down for a couple of weeks during the deer season. A negro boy on the place accompanied him one day on a hunt, and was given a gun and a station. Pretty soon a deer, started by the dogs, headed toward the boy's station. The others heard the boy bang away. When they saw him later, the business man asked:

"Did you see him?"

"Yassah."

"Did you hit him?"

"I don't know, Boss, but I sho' put him in high."

Unawares

"And where did you first meet your wife?" the little man in the corner was asked.

"Gentlemen, I did not meet her," he replied solemnly. "She overtook me."

Not Expected

The golfer had lost his ball, and, not unnaturally, was inclined to be annoyed with his caddie.

"Why the deuce didn't you watch where it went?" he asked angrily.

"Well, sir," said the boy, "it don't usually go anywhere, and so it took me unprepared like."

Proper Time

During a pause in the sermon the deacon leaned over and whispered to the minister: "Remember, you were going to say something about the high cost of living."

"I haven't forgotten it," replied the minister. "I'll speak of it after the collection has been taken up."

New Way, But No.

"You look like a nice, sensible girl. Let's get married."

"No, I'm just as nice and sensible as I look."

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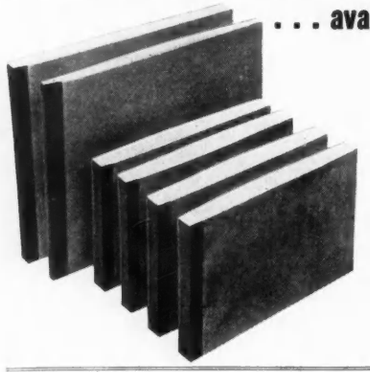

After carefully reviewing the forms of a number of oil companies, The Gulf Publishing Company has made up six standard forms listed below and has produced these in such quantities as to enable oil companies to secure them at substantial savings.

These forms are printed on 16 lb. Bond Paper. They are substantially bound. Duplicates are printed on colored bond and perforated, pencil carbon included with each book.

Forms will be shipped prepaid at prices shown below. Samples will be sent upon request.

Number	Kind of Form	PRICE 1 Book	5 Books	10 Books
Form 100	DAILY DRILLING REPORT—1 Tour (In duplicate—100 sets to the book)	$1.50	$6.50	$10.50
Form 101	DAILY TIME RECORD (In duplicate—100 sets to the book)	1.40	6.00	9.50
Form 102	DAILY GAUGE REPORT (In duplicate—100 sets to the book)	1.40	6.00	9.50
Form 103	WELL LOG AND RELATED DATA (8½x11, Printed both sides—100 to book)	1.50	6.50	10.50
Form 104	PIPE TALLY SHEET (In duplicate—100 sets to the book)	1.50	6.50	10.50
Form 105	MATERIAL TRANSFER RECORD (In duplicate—100 sets to the book)	1.50	6.50	10.50
Form 106	DAILY DRILLING REPORT—3 Tours (In duplicate—100 sets to the book)	1.50	6.50	10.50

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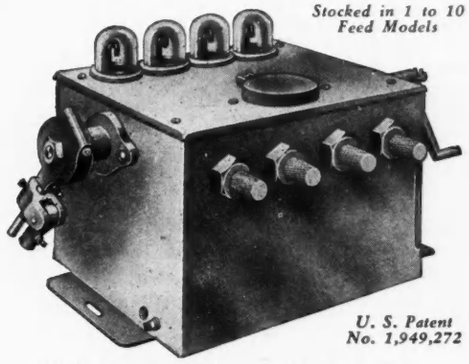

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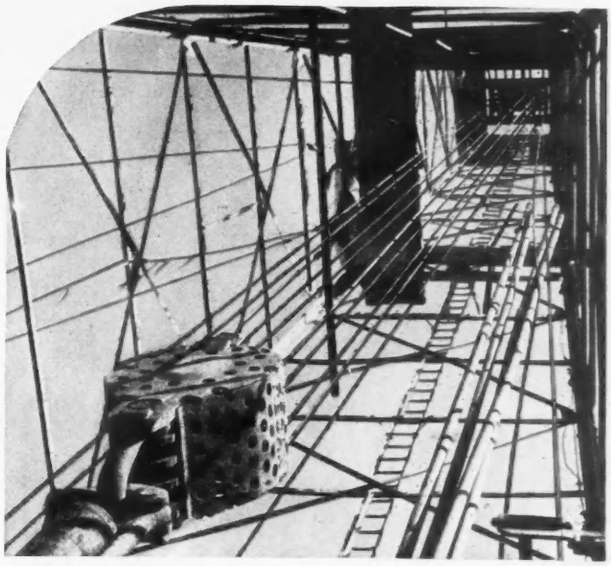

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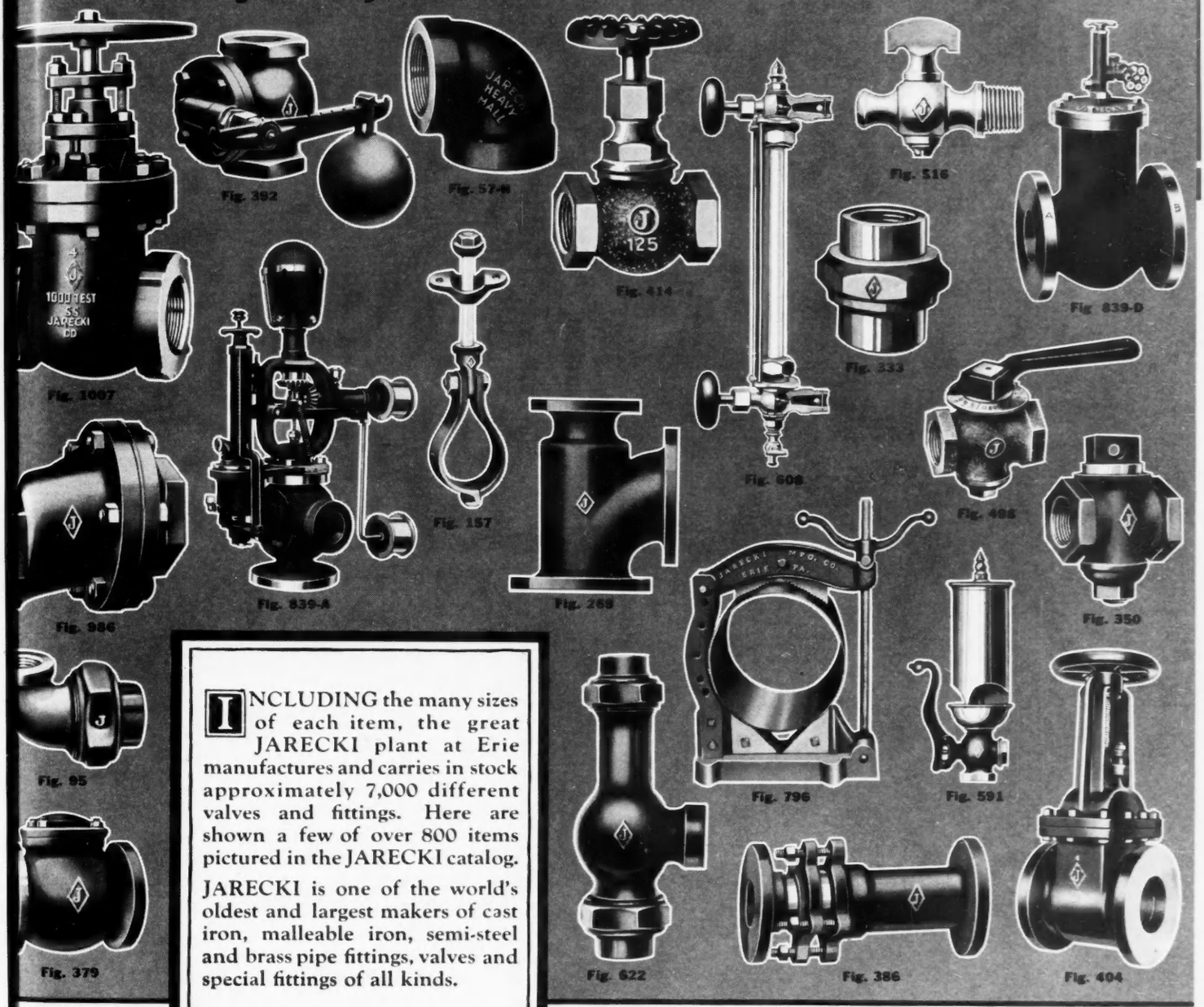

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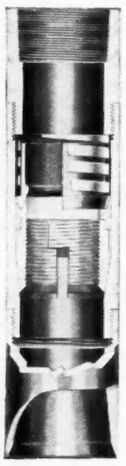

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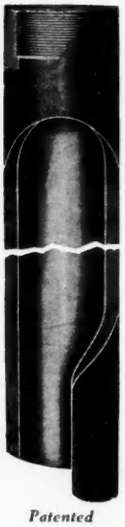

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